

Aviation Safety Workforce Plan

2019-2028



US Department of Transportation
Federal Aviation Administration



This is the Federal Aviation Administration's (FAA) twelfth annual update to the Aviation Safety (AVS) Workforce Plan. This plan provides staffing estimates for all of the FAA's AVS Services and Offices as well as actual onboard levels as of September 2018. This 2019 report incorporates changes in aircraft fleet and operations forecasts, inspector and engineer retirements, and other factors. To meet the requirements of the Consolidated Appropriations Act, 2019 (P.L. 116-6) and the FAA Modernization and Reform Act of 2012 (P.L. 112-95, Section 606(b)), the FAA has prepared an annual AVS Workforce Plan, which:

- Provides the background for current staffing levels
- Describes the evolving AVS environment
- Provides a staffing forecast for Aviation Safety Inspectors (ASI) and Aviation Safety Engineers (ASE) based on model results
- Forecasts expected attrition and specific hiring targets over a 10-year period
- Details strategies for meeting staffing needs

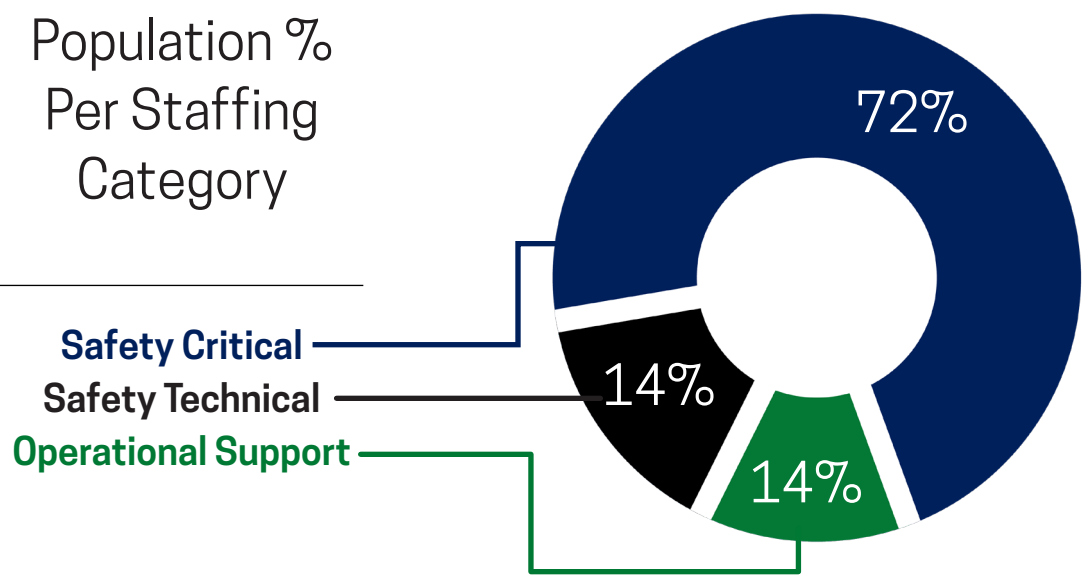


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2018 HIGHLIGHTS

Over 7,000 Employees
Uses Over 9,000 Designees
Offices in Over 80 Locations



AIR OPERATOR CERTIFICATES	5,435
Major U.S. Air Carriers	82
Commercial Operators	83
Commuter Air Carriers / On-Demand	2,209
Foreign Air Carriers	515
External Load (e.g., Logging, Oil Platform)	381
Agricultural Operators	1,843
Public Use Authorities (e.g., State / City/ Police)	322

EXECUTIVE SUMMARY

The Federal Aviation Administration's (FAA) mission is to provide the safest, most efficient aerospace system in the world. In support of this mission, the FAA's Aviation Safety (AVS) organization sets, oversees, and enforces safety standards for any person or product that operates within the National Airspace System (NAS). In executing its responsibilities, AVS embraces the challenges of the ever-dynamic aviation safety environment.

INDUSTRY AND TECHNOLOGY UPDATES

The FAA continues to work toward transforming the NAS through the implementation of Next Generation Air Transportation System (NextGen) technologies and the use of a Safety Management System (SMS). This approach addresses industry business changes, technological advances, and the need for greater global harmonization. To stay aligned with these changes, AVS continues to forecast staffing levels and manage changing workload demands.

HIRING, STAFFING, AND ATTRITION

AVS continues to recruit, hire, and retain highly qualified safety professionals who have the necessary technical and analytical skills to meet the safety mission. In FY 2018, the enacted staffing level for AVS was 7,266 positions. AVS ended FY 2018 with a staffing level of 7,092. The agency is taking steps, including recruitment incentives, to increase the number of qualified applicants to meet the need.

TRAINING AND SUCCESSION PLANNING

AVS will continue to hire safety professionals as well as focus on providing appropriate training to take advantage of the workforce's diverse skill sets. By leveraging a combination of innovative Web-Based Training (WBT) and traditional classroom-based instruction, AVS is preparing its workforce to meet the future demands of a dynamic aviation environment. AVS remains focused on building and maintaining a pipeline of skilled employees who are prepared to take on increasing responsibility within the organization. AVS tends to hire people much later in their career. Mission-critical occupations, such as Aviation Safety Inspectors (ASIs) and Aviation Safety Engineers (ASEs), have the highest average workforce age and lowest average tenure, which reflects the hiring of experienced employees from industry.

2018 AVIATION ENVIRONMENT



5,435
Operator
Certificates



792,003
Active
Pilots
(includes UAS)



6,776
Air
Agency
Certificates



721,738
Non-Pilot
Personnel



372,060
Airmen
Medical
Examinations



291,184
Registered
Manned
Aircraft



1,267,233
Registered
Unmanned
Aircraft



108,808
Flight
Instructors



1,579
Approved
Manufacturers



21,797
Mechanics
With Inspection
Authority



191
Foreign Civil
Aviation
Authorities



UNDERSTANDING THE AVS MISSION

AVS MISSION

AVS promotes the safety of the world’s largest, most complex aviation system by regulating and providing oversight of the civil aviation industry. The AVS workforce is responsible for setting standards, certification, and continued operational safety.

Figure 1 | AVS Safety Mission
From design through operation, AVS ensures that every entity certified to operate within the NAS continues to meet required safety standards.



Setting Standards

AVS creates and amends the rules, regulations, policies, and associated guidance materials that apply to people, organizations, and equipment operating within the nation’s civil aviation system. AVS also develops aviation safety and certification standards and policies in collaboration with the aviation industry, other government agencies, international partners, and Subject Matter Experts (SMEs) within other FAA lines of business.

Certification

AVS determines compliance with safety standards and issues certificates based on these standards. AVS issues both initial certificates and renewals to airmen, airlines, engineering and manufacturing organizations, aircraft owners, aircraft repair stations, and repairmen, among others. AVS also issues airworthiness approvals for aircraft, engines, and other aircraft parts.

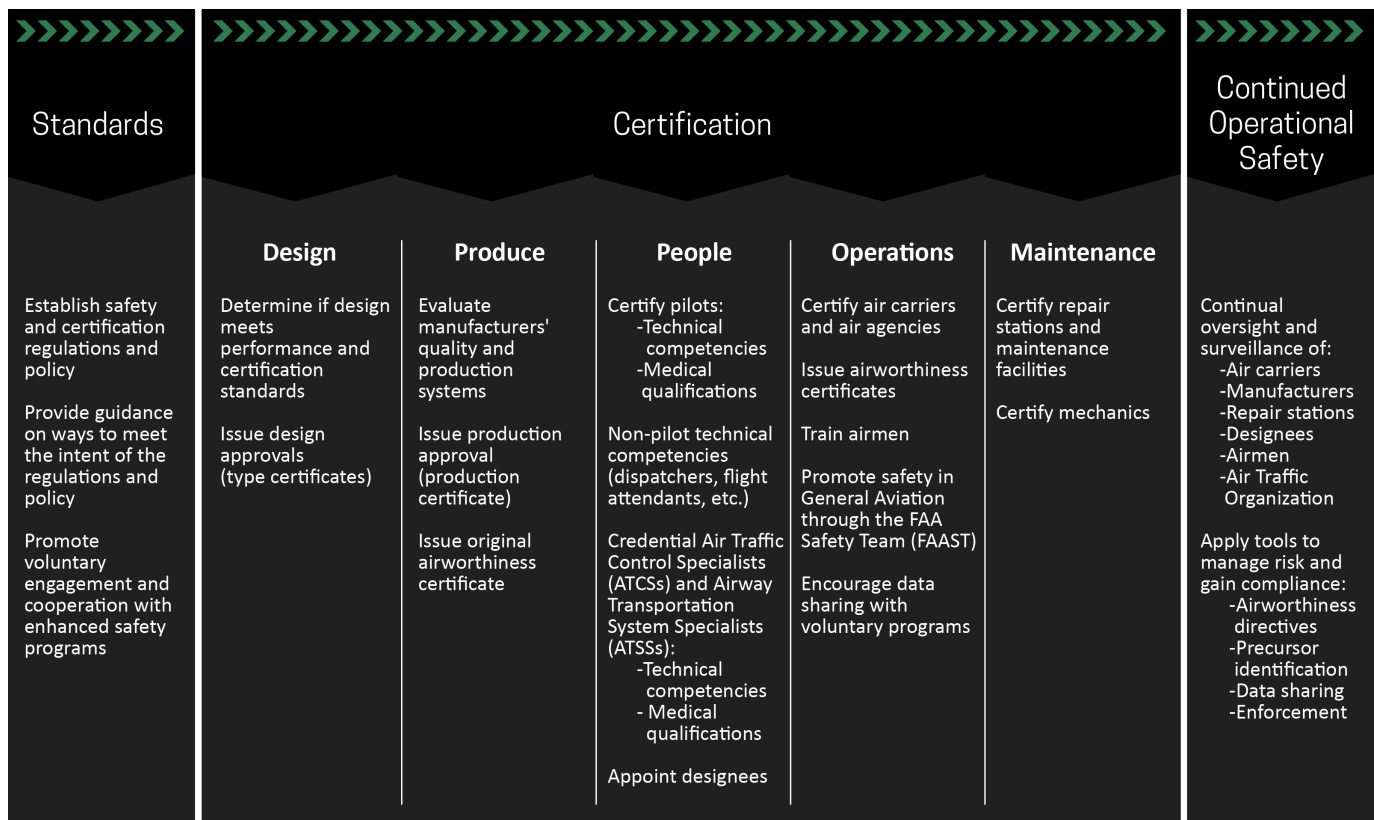
Continued Operational Safety

AVS ensures existing certificate holders continue to meet the necessary safety requirements, standards, and regulations through safety surveillance and oversight programs, audits, evaluations, education and training, research, and accident/incident investigations.

Figure 2 | AVS Safety Continuum

The AVS safety continuum encompasses every aspect within the lifecycle of an aircraft.

AVS SAFETY CONTINUUM



COMPLIANCE PROGRAM

Overview

The FAA's Compliance Program Order 8000.373A sets forth the overarching guidance for implementing the FAA's strategic safety oversight approach. The Order clarifies and reinforces the law and Agency policy that provide for FAA program offices to take the most appropriate action to resolve deviations in the NAS.

The Compliance Program is routinely applied to all interactions with airmen, certificated entities, non-certificated persons, and all investigatory processes. Compliance with the rules (established risk controls) is the minimum that we expect from certificate holders. Our shared safety duty and responsibility with NAS participants is about identifying hazards and risks, whether or not there are deviations from the regulations, and using the most effective means to return the person to full compliance. We also look to prevent recurrence in order to achieve the highest degree of safety.

Background

Initially referred to as the Compliance Philosophy, the Compliance Program represents a focus on using, where appropriate, "Compliance Action." Compliance Action describes the FAA's non-enforcement methods for correcting unintentional deviations or noncompliance resulting from factors such as flawed systems and procedures, simple mistakes, lack of understanding, or diminished skills.

In accordance with FAA strategic initiatives, the Compliance Program allows the FAA to move to an oversight approach that pro-actively manages risks globally through the identification and control of existing or emerging safety issues. It allows the FAA to concentrate resources on risk identification and problem solving. The Compliance Program Order also establishes a framework that enables the FAA to place more emphasis on effective compliance—how certificate holders ensure compliance rather than just a simple determination of whether they comply.

The Compliance Program promotes safety management principles to address safety risks by using consistent, data-informed approaches to make system-level, risk-based decisions. To foster an open and transparent exchange of information, the FAA believes that the Compliance Program, supported by an established safety culture, is instrumental in ensuring compliance with regulations, identification of hazards, and management of risks. The program does not remove the FAA's option for enforcement in cases of repeated, intentional, or reckless deviation from standards or laws.

Results

The Compliance Program has improved communication with certificate holders. Overall voluntary reporting has increased as more people are taking action on their own to address safety deficiencies. Over 19,000 safety issues have been corrected using non-enforcement Compliance Actions to address regulatory deviations. These are risks that were mitigated—improving the safety of the NAS. When enforcement was needed, cases have been worked more efficiently. These facts highlight only some of the successes gained through the implementation of the Compliance Program.

MEETING THE CHALLENGE THROUGH FAA SAFETY MANAGEMENT

To reach the next level of safety in an increasingly complex and global air transportation environment, the FAA has instituted a proactive safety management approach. This approach ensures that the outcomes of any management or system activity incorporate safety considerations. We have implemented this approach through the United States (US) State Safety Program (SSP), enabled by the FAA Safety Management System (SMS), both of which are consistent with the International Civil Aviation Organization (ICAO) SSP and SMS frameworks.

The FAA Risk-Based Decision Making (RBDM) Strategic Initiative, conducted in FY 2014 through FY 2018, further focused our efforts on ensuring that we have the components in place for successful safety management. The initiative contained activities that helped to further the FAA SMS. This included setting up tools/processes that enabled the gathering and sharing of data with those who could benefit and the structure for using that data to make risk-based decisions.

Now that we have completed the activities that make up the RBDM Strategic Initiative, we have instituted a risk-based decision making approach within our SMS that improves how we make decisions based on safety risk. We now leverage the use of consistent, data-informed approaches to make smarter, system-level, risk-based decisions. The SMS further provides the structure to manage those decisions.

Aircraft Certification Service (AIR) incorporates risk-based decision making into its core functions of FAA involvement based on risk to the aircraft certification safety system. An example of this is a new policy to reduce costs and streamline the installation of Non-Required Safety Enhancing Equipment (NORSEE) in General Aviation aircraft. AIR uses past performance and overall safety risk to determine the frequency of surveillance of aviation manufacturers and the use of the Monitor Safety/Analyze Data process to promote data-driven risk assurance for the continued operational safety of products throughout their life cycle.

Safety Management System (SMS)

SMS is the formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk. An SMS establishes a formalized, safety risk-based approach to the management of an organization whereby every process, decision, activity, acquisition, procedural change, or program modification is examined from a safety risk perspective in order to ensure that most of the potential associated hazards are uncovered, examined, and mitigated. It includes Agency-wide safety policy, formal methods for identifying hazards, processes for continually assessing and controlling risk and safety performance, and the promotion of a safety culture.

Specifically, SMS consists of four main components: Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion. These components work together to enable AVS to manage safety risk in the aerospace system.

- **Safety Policy** – The organization’s documented commitment to safety, which defines its safety objectives and the accountabilities and responsibilities of its employees in regard to safety and places safety accountability at the top levels of the organization.

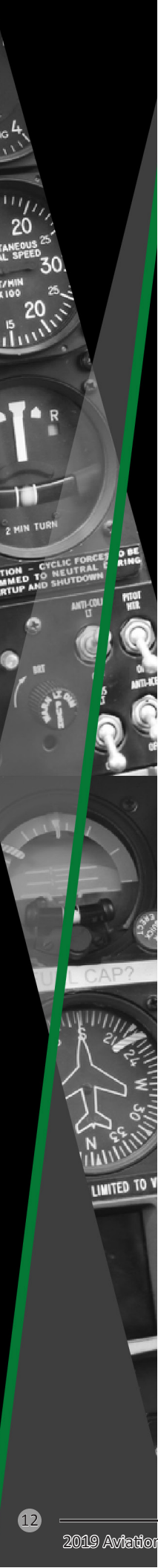
- **Safety Risk Management (SRM)** – A process within the SMS composed of describing the system; identifying the hazards; and analyzing, assessing, and controlling risk.
- **Safety Assurance** – Processes within the SMS that function systematically to ensure the performance and effectiveness of safety risk controls and that the organization meets or exceeds safety objectives through the collection, analysis, and assessment of information.
- **Safety Promotion** – The establishment and maintenance of a positive safety culture within an organization, the organization’s safety training programs, and the means to communicate regarding safety.

An SMS builds on existing processes, procedures, and tools, enabling integration and interoperability across FAA lines of business (LOB) and AVS Services and Offices. It also allows for the introduction of new capabilities to meet the requirements in the current version of FAA Order 8000.369B, FAA Safety Management System, and FAA Order 8000.367B, Aviation Safety (AVS) Safety Management System Requirements.

Safety Management System Tools

AVS must develop and implement advanced tools and techniques to assess and mitigate aviation risks within a changing environment. AVS and aviation industry organizations are currently using or implementing several technological capabilities developed to manage accident risk.

- **Hazard Identification, Risk Management and Tracking (HIRMT)** is an FAA-wide, web-based tool designed to capture, manage, and report on safety issues affecting multiple LOBs and Staff Offices. The HIRMT tool categorizes identified hazards using a consistent, systematic methodology, facilitates consistent use of prescribed safety risk management and safety assurance processes, brings visibility to complex safety issues across multiple organizations’ areas of responsibility, and tracks the status of hazard analysis and risk management efforts to provide an overall view of FAA and organizational safety portfolios.
- **Regulation and Certification Infrastructure for System Safety (RCISS)** provides hardware and software capability for safety applications throughout AVS. These applications assist in prioritizing AVS resources based on changing workload demands.
- The **Safety Assurance System (SAS)** is an information technology system that supports the Safety Assurance component of the Flight Standards’ (AFS) SMS. SAS supports a new, pro-active systems safety approach that will significantly improve the FAA’s ability to identify and address hazards and safety risks before they result in accidents. The SAS oversight system is being designed, developed, and implemented under the System Approach for Safety Oversight (SASO) Program. The SASO Program improves, automates, and standardizes the FAA’s safety oversight and inspection processes by implementing the International Civil Aviation Organization (ICAO) SMS.
- The **Aviation Safety Information Analysis and Sharing (ASIAS)** program connects a wide variety of safety data and information sources across industry and government, including voluntarily provided safety data. ASIAS partners with the Commercial Aviation Safety Team (CAST) and the General Aviation Joint Steering Committee (GAJSC) to monitor known risks, evaluate the effectiveness of deployed mitigations, and detect emerging hazards.

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- The **Monitor Safety/Analyze Data (MSAD)** process and IT tools are used by AIR to: analyze event-based safety data, identify the appropriate response to significant events in support of continued operational safety, and detect trends that could influence future events. The MSAD process helps identify safety issues for in-service aircraft fleets and identify corrective actions to mitigate safety risks across the fleet. The process uses product-defined hazard criteria to pinpoint potential hazards from pools of safety data. With MSAD, AIR can better identify emerging safety trends through dependent variable analysis. In addition, MSAD establishes a causal analysis approach to identify the underlying contributing factors of significant events, such as process breakdowns, which are then communicated to the appropriate AVS oversight business process owner.
 - The **Risk-Based Resource Targeting (RBRT)** process and IT tools are used by AIR to assess risk and identify risk management options in order to establish work priorities and allocate resources. It is a sub-process used in other AIR business processes such as type and production certification, certificate management, and designee management. This process establishes risk thresholds that provide a consistent approach for AIR involvement and prioritization of decisions. It allows AIR to manage resources with a consistent understanding of the risks based on real-time data.
 - The **Aerospace Medicine Safety Information System (AMSIS)** will provide the Office of Aerospace Medicine (AAM) with a state-of-the-art aerospace medical information network, integrating critical data from a variety of national and international locations. The program will deliver re-engineered AAM safety program business processes with a next generation enterprise information system. It will enable AAM to analyze information and make risk-based decisions through improved collection, review, and analyses of information for airmen, ATCSs, and industry drug and alcohol testing programs. The system will support timely and comprehensive access to data by reducing delays, thereby improving timeliness and accuracy while eliminating paper-based correspondence. AMSIS will also enable greater collaboration within the aviation community—both domestic and international—as well as among industry, personnel, designees, and applicants. AMSIS Phase 1 Initial Operational Capability will be achieved in FY 2020, and the final Full Operational Capability is projected for beyond FY 2023.
 - The **Systems Safety Management Transformation (SSMT)** enables safety assessments of proposed NextGen concepts, algorithms, and technologies that address the economic, implementation, operational, and performance impacts of NextGen alternatives. The program will develop a working prototype of a National Level Safety Assessment within the Integrated Safety Assessment Model (ISAM). It will link the Airport Surface Anomaly Investigation Capability (ASAIC) anomaly detection and accident DNA from National Transportation Safety Board (NTSB) reports to pro-actively identify emerging risks associated with NAS-wide operations. Hazard identification and tracking systems developed within the FAA will be linked to the ISAM to support operational safety analyses. Mechanisms to define and support integrated risk-based approaches to safety and safety oversight will be prototyped to monitor operational safety and determine safety implications to the air transportation system of operational changes primarily driven by NextGen.

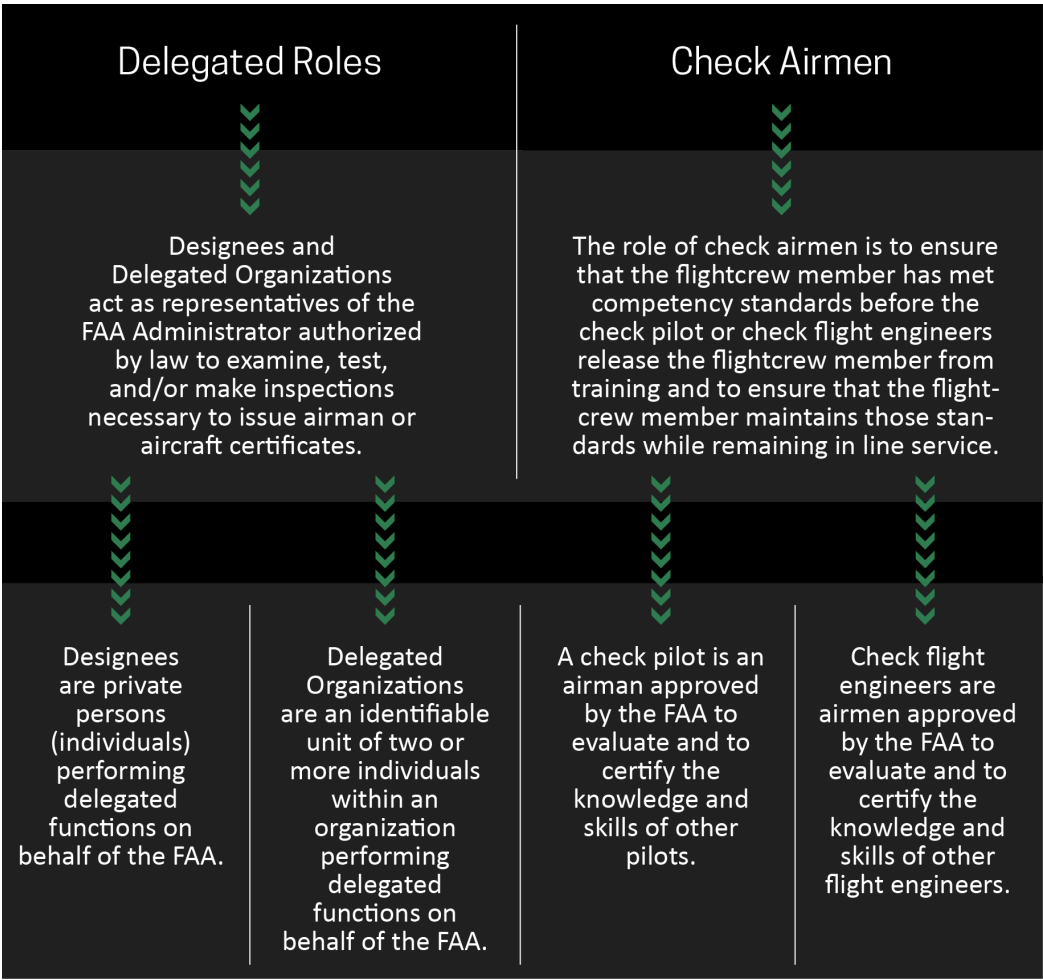
DESIGNEES, DELEGATED PROGRAMS, AND CHECK AIRMEN

Designees and delegated organizations are the private persons and organizations to which AVS assigns the authority of performing functions on behalf of the Administrator under 49 USC Sec. 44702 (d) and Title 14 of the Code of Regulations (14 CFR) Part 183. Risk management, designees, and delegated organizations help the FAA meet the needs of the aviation industry and better leverage federal resources to focus on efforts that cannot be delegated.

Check airmen are pilots or flight engineers who are qualified and permitted to conduct flight checks or instruction in an airplane, flight simulator, and/or a flight training device for a particular type of airplane under an approved air carrier training program. The role of the check airman is to ensure that a flightcrew member has met competency standards before the check airman releases the flightcrew member from training and to ensure the flightcrew member maintains those standards while remaining in line service. Because check airmen do not conduct flight tests to issue airman certificates, they are not considered designees as defined in 14 CFR part 183.

Figure 3 | Delegated Roles and Check Airmen

Figure 3 explains the functions performed by designees and delegated organizations on behalf of the FAA and the functions performed by check airmen under the certificate authority of their employer.

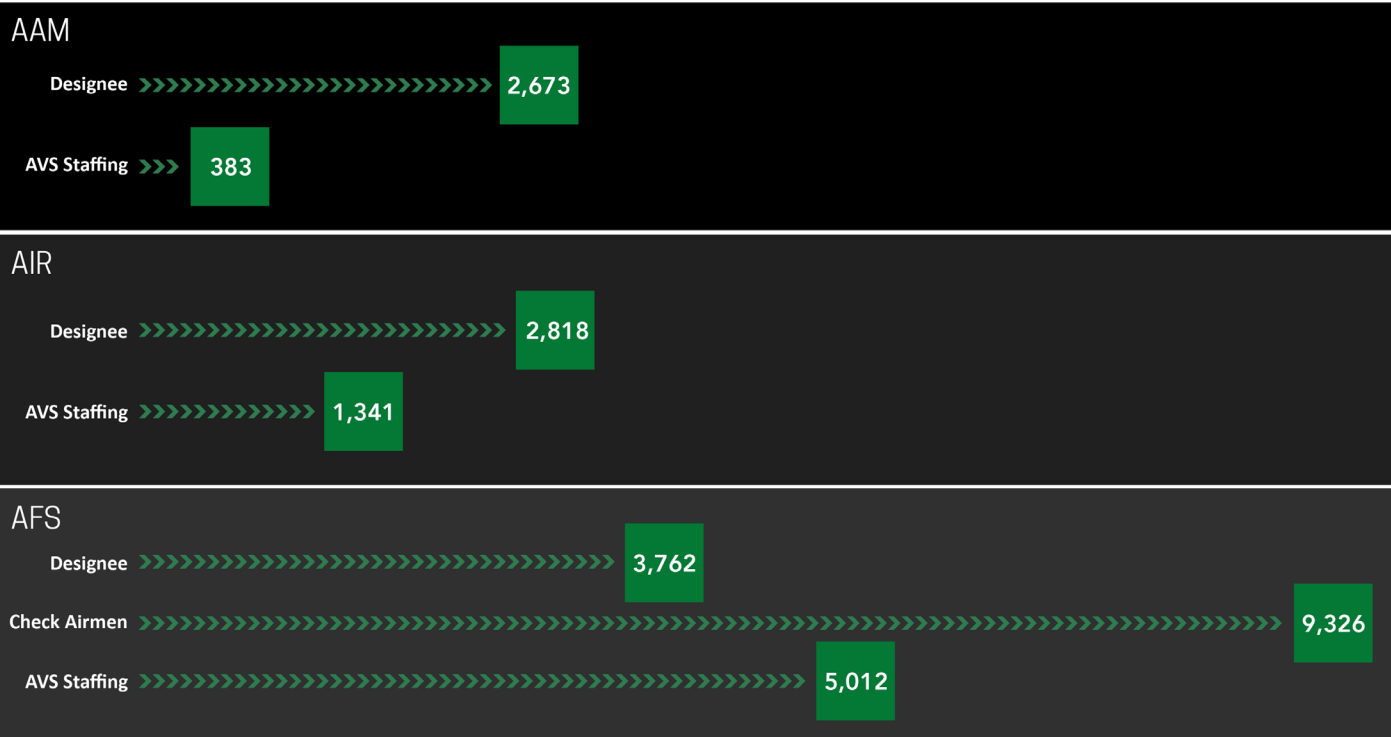




AFS, AIR, and AAM combined oversee over 9,000 designees or delegated organizations and over 9,000 check airmen. It is important for the FAA to have the data, evaluative processes, and a well-trained staff to monitor the designee program effectively. This ensures that goals are met and a positive impact on safety and efficiency is attained.

Figure 4: Leveraging Delegation

Figure 4 provides further detail on how AFS, AIR, and AAM leverage individual designees and check airmen. The graphic does not include other AVS Services and Offices as they do not have an individual designee or check airmen component.



FUTURE OF FLIGHT STANDARDS

To effectively implement risk-based decision making in the oversight of a highly dynamic industry, the Flight Standards Service (AFS) is evolving into a more agile, effective, and consistent organization. It will need to operate with greater accountability, better use of resources, and change readiness. This requires both cultural and structural changes.

AFS has completed the major part of transitioning from a geography-based structure to a functional-based structure. This shift advances the core attributes of interdependence, critical thinking, and consistency that have been embedded in each employee's work requirements.

The realigned organizational structure allows inconsistencies and inefficiencies to become more visible to management. As opportunities are identified, we expect to more effectively leverage resources between office locations, change our processes to be more efficient, and use a larger set of data to target our activities toward those areas of the aviation system with the highest risk. These changes will impact our future workforce requirements as we become more agile in our recruitment methodology and to meet our need for additional safety experts in emerging areas of activity, such as operations research analysts.

Another important factor is the adoption of safety management systems for all 14 CFR part 121 operators and by other certificate holders under a volunteer program. These programs shift FAA activities toward monitoring the effectiveness of the certificate-holder's internal program, augmented by conventional surveillance to ensure we have an accurate perspective of the safety system.

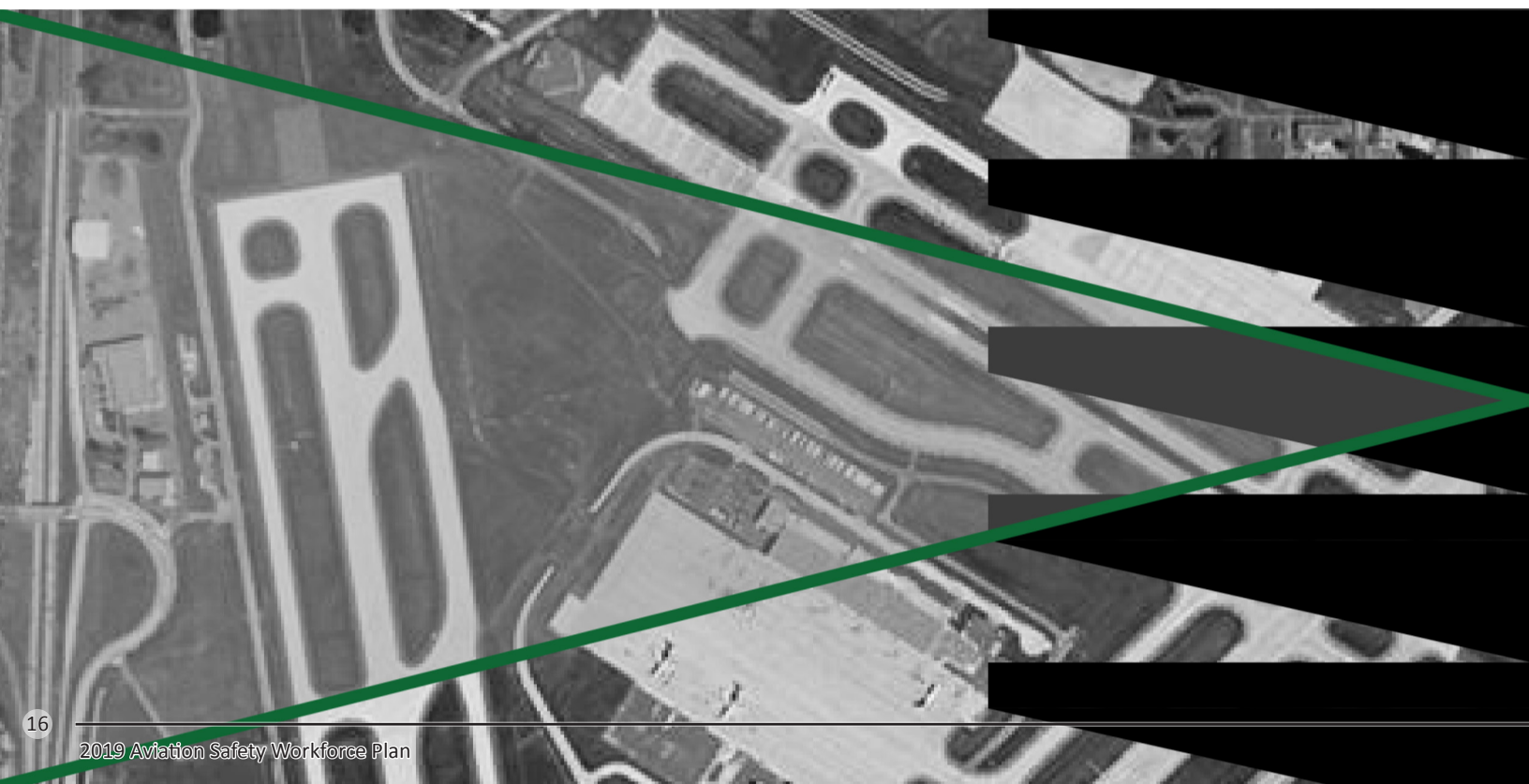
AFS will continue to evolve in multiple phases over the next year to ensure continuity of operations. These changes will enable AFS to further align its internal structure and responsibilities and streamline programs to create efficiencies, reduce waste, and improve aviation safety.



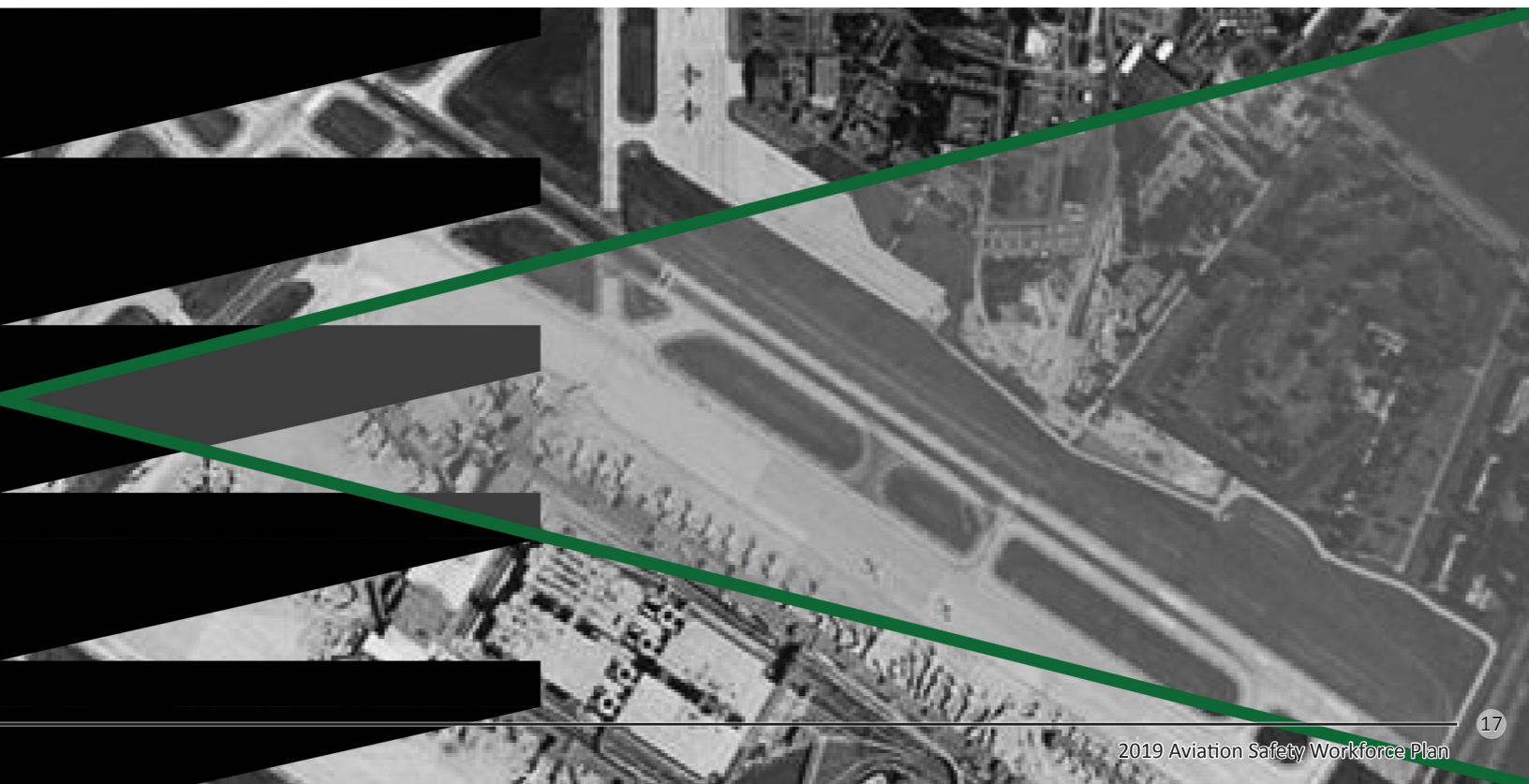
AIRCRAFT CERTIFICATION SERVICE (AIR) TRANSFORMATION

AIR Transformation is a comprehensive approach to improving efficiency and effectiveness by shifting the timing of AIR engagement activities with industry. Previously, core activities were transactional steps that created a hard dependency on the critical path in the middle of the certification process. AIR Transformation shifts the emphasis to upfront planning, use of performance-based standards, and a robust risk-based oversight program. Engaging industry early to prepare for the introduction of new technology allows AIR to streamline the certification process for industry and reiterates the safety culture through all phases of the process.

As a major step toward AIR Transformation, in July 2017 the service reorganized from a product-based structure to an organization that is functionally aligned. This phase involved aligning AIR's existing local offices, such as Aircraft Certification Offices (ACOs), Standards Staffs, Technical and Administrative Support Offices, Manufacturing Inspection Offices (MIOs), and Manufacturing Inspection District Offices (MIDOs) into functional divisions. The next phase, Refinement, is currently underway. It provides an inclusive, collaborative second chapter in AIR's reorganization, which includes the detailed design for, permanent placement of staff in, and phased operationalization of each functional division. While initial realignment had minimal immediate impact on AIR's stakeholders, the service is promoting close engagement with the aviation industry, international partners, and labor. To increase awareness, AIR published a Blueprint for AIR Transformation in March 2017, which contained the vision and high level strategy for transforming the Aircraft Certification Safety System to become more efficient and effective while maintaining the gold standard in aviation safety.



In 2018, AIR continued significant efforts toward AIR Transformation with the development and publication of the first edition of AIR's Comprehensive Strategic Plan (CSP). The CSP translates the Blueprint for AIR Transformation into a broad set of initiatives that, when fully implemented, will transform the Aircraft Certification Safety System. This effort, and the current work by the AIR strategic planning team on developing a strategic management process, aligns with the FAA's and AVS's strategic planning efforts. Additionally, as the reorganization of AIR proceeds through the critical phase of Refinement, newly established divisions are working to enhance their organizational structure, processes, and functions with the proper placement, management, and empowerment of staff. AIR continues to work with internal and external stakeholders on collaboration and engagement. The Safety Oversight and Certification Aviation Rulemaking Committee (SOC ARC) Charter was signed in January 2018, and the committee plans to submit recommendations that could impact AIR's oversight and certification programs as well as the FAA's existing regulatory structure.



UNMANNED AIRCRAFT SYSTEMS (UAS)

UAS operations are quickly increasing in number, technical complexity, and sophistication. UAS are representative of one of the most dynamic periods of change in the history of transportation. The growth in popularity of UAS presents a number of challenges. In order to facilitate the safe and efficient integration of UAS into the NAS, the FAA established the UAS Integration Office (AUS) in December 2016. AVS has identified activities the FAA will perform over the next five years to enable a risk-based regulatory framework supporting the integration of UAS into the NAS. The FAA collaborates with a full spectrum of stakeholders, including:

- Manufacturers
- Commercial vendors
- Industry trade associations
- Law enforcement and first responder agencies
- Technical standards organizations
- Academic institutions
- Research and development centers
- Governmental agencies and other regulators

The process of developing regulations is resource intensive. To establish an appropriate UAS oversight framework, the FAA will continue to develop, review, and revise policies, guidance, and rules to specifically address safe and efficient UAS integration and evolution within the NAS.

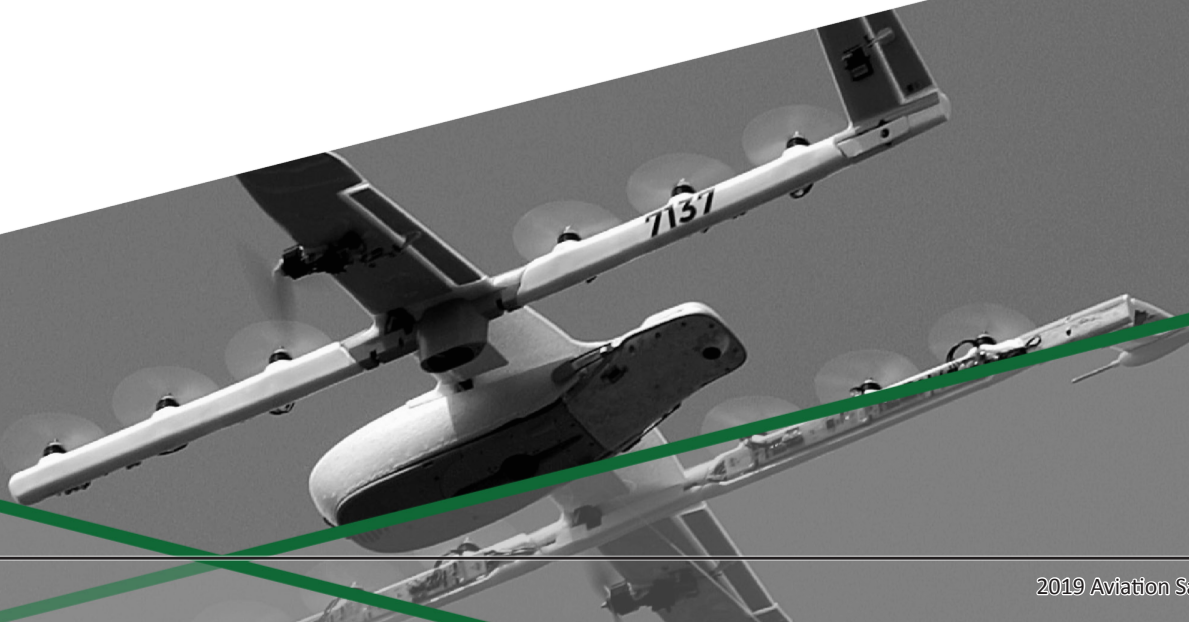
The FAA has adjusted manual processes and procedures and realigned personnel to meet the increasing UAS operational demand. These efforts have been primarily achieved by reallocating personnel to support UAS activities — including standing up the UAS Integration Office, developing the Agency framework for UAS integration into the NAS, and conducting the initial implementation of the Small UAS Rule (14 CFR part 107), which was designed to ensure safe, routine UAS operations while not stifling innovation. Multiple services across AVS and the FAA participated in the implementation of part 107. Subsequent rulemaking efforts will be required for continued integration, including rules to address concerns about UAS security and operations currently being authorized through waivers to the part 107 rule.

As of October 2018, AUS has increased outreach and improved stakeholder relationships, stood up the Unmanned Aircraft Safety Team (UAST), held three annual UAS Symposiums, stood up the Drone Advisory Committee (DAC), established four Partnership for Safety Plans (PSPs), and worked with Flight Standards to complete the following:

- Approved 2,085 Non-Airspace Waivers under 14 CFR part 107
- Issued 114,990 Remote Pilot Certificates
- Processed 1,267,233 UAS Registrations

In addition, zero fatalities or serious injuries related to UAS operations were reported in the first year since the Small UAS Rule (14 CFR Part 107) took effect. In FY 2018 and beyond, AUS will continue working with national security agencies to coordinate FAA UAS initiatives to ensure security concerns are addressed. AUS will also work with the FAA's Law Enforcement Assistance Program to provide outreach and educational support to law enforcement organizations to ensure they know what do and what laws pertain to UAS that may be in their jurisdictions. These are important steps as the FAA continues developing UAS regulations in order to safely integrate UAS into the NAS.

In October 2017, the President of the United States issued a memorandum to the Secretary of Transportation to establish a UAS Integration Pilot Program. This program created a mechanism for the private sector and state/local/tribal governments to form partnerships that will gather test data toward advancing new, safe operational concepts, such as flights over people and package deliveries, in selected jurisdictions. The Secretary selected ten head participants, and the FAA signed a memorandum of agreement (MOA) with each—operations began in summer 2018. The program will expire three years after the date the memo was signed and is likely to require additional resources from organizations across the FAA, in addition to AUS resources and management for this program.





UNDERSTANDING THE AVS WORKFORCE

STAFFING CATEGORIES

Three staffing categories constitute the AVS workforce, each with their own distinct set of responsibilities.

Safety Critical Operational Staff

Safety Critical Operational Staff have a direct operational impact on the AVS safety mission. Their responsibilities include, but are not limited to:

- Monitoring and enforcing industry compliance with safety regulations through inspections, data analysis, and risk management
- Certifying aviation personnel, airlines, repair stations, training centers, and other aviation agencies
- Monitoring and enforcing ATO compliance with safety standards
- Certifying aircraft alterations, equipment, and avionics
- Overseeing and monitoring AVS designee programs
- Monitoring and enforcing industry drug and alcohol testing programs
- Investigating accidents and incidents
- Overseeing and monitoring UAS integration into the NAS

Safety Technical Specialist Staff

Safety Technical Specialist Staff provide the necessary support for safety critical operational staff to do their jobs efficiently and effectively. These responsibilities include, but are not limited to:

- Evaluating and analyzing the effectiveness of existing AVS certification, regulatory, and compliance programs
- Developing new programs, activities, and methods for improved oversight activities and enhanced industry safety
- Implementing new programs and revised approaches as directed by Congress, the Government Accountability Office (GAO), the U.S. Department of Transportation Office of the Inspector General (OIG), the NTSB, and other oversight organizations
- Designing, developing, and delivering technical training curricula
- Maintaining airmen and aircraft registries and the airmen medical certification system
- Guiding development and publication of FAA rules and regulations through the rulemaking process

Operational Support Staff

Operational Support Staff consist of all AVS personnel in functions that are not classified as Safety Critical Operational Staff or Safety Technical Specialist Staff. These individuals perform functions such as management, supervision, resource planning, and project administration.

AVS SERVICES AND OFFICES

AVS serves the aviation community by promoting safety and providing a breadth of services. The AVS workforce includes eight services and offices located domestically and abroad. The population distribution charts represent the FY 2018 workforce.

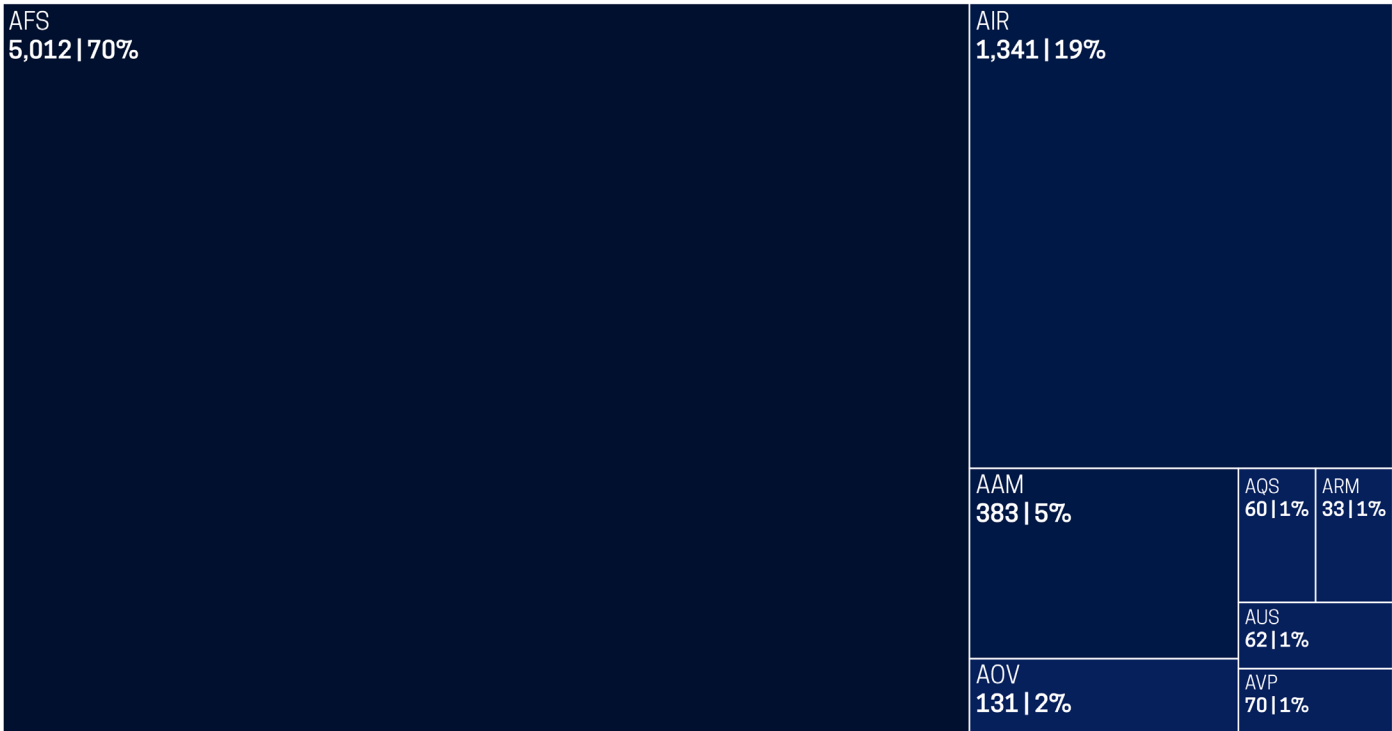
Services

- Flight Standards (AFS)
- Aircraft Certification (AIR)
- Air Traffic Safety Oversight (AOV)

Offices

- Aerospace Medicine (AAM)
- Accident Investigation & Prevention (AVP)
- Rulemaking (ARM)
- Quality, Integration & Executive Services (AQS)
- Unmanned Aircraft Systems Integration (AUS)

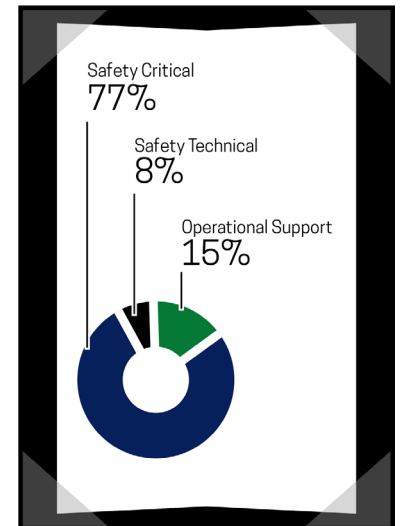
Figure 5 | AVS Population
The composition of the Aviation Safety Workforce by Services and Offices.



Flight Standards (AFS) 5,012 (70%)

The Flight Standards Service promotes safety in air transportation by setting the standards for certification and oversight of airmen, air operators, air agencies, and designees as well as safe flight of civil aircraft in air commerce by:

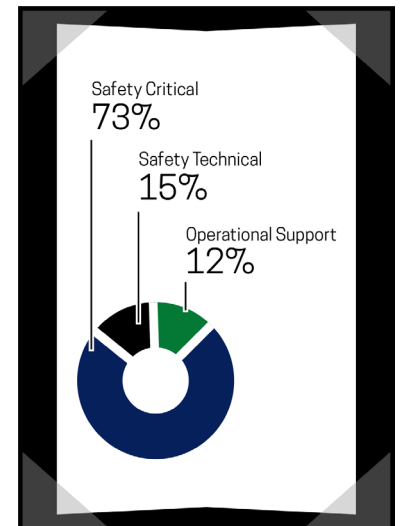
- Setting regulations and standards that consider the air carrier's duty to operate in the public interest at the highest possible degree of safety
- Setting regulations and standards for other air commerce, air agencies, and airmen at the appropriate level of safety to the public interest
- Certification, inspection, surveillance, investigation, and enforcement activities
- Managing the registry system for civil aircraft and all official airmen records



Aircraft Certification (AIR) 1,341 (19%)

The Aircraft Certification Service develops and administers safety standards governing the design, production, and airworthiness of civil aeronautical products by:

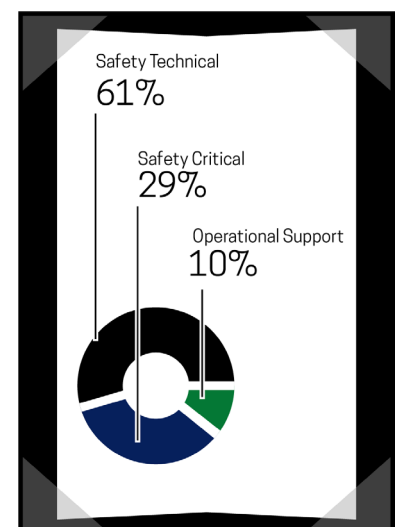
- Overseeing design, production, and airworthiness certification programs to ensure compliance with prescribed safety standards
- Establishing and maintaining a safety performance management system for continued operational safety of aircraft
- Providing oversight of approval holders, designees, and delegated organizations
- Working with aviation authorities, manufacturers, and other stakeholders to help them improve safety in the international air transportation system



Aerospace Medicine (AAM) 383 (5%)

The Office of Aerospace Medicine is responsible for a broad range of medical programs and services for both the domestic and international aviation communities. AAM provides global leadership for aerospace medicine in the twenty-first century by:

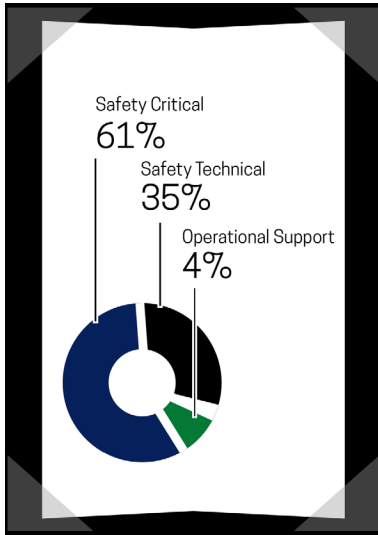
- Providing aerospace medical education
- Conducting and providing aerospace medical and human factors research
- Establishing and overseeing aviation industry drug and alcohol testing
- Providing the employee health awareness program
- Providing FAA employee drug and alcohol testing
- Conducting and determining medical clearance of air traffic control specialists and other FAA employees required to meet medical standards to perform safety-sensitive duties
- Providing Occupational Health
- Establishing and determining pilot medical certification



Air Traffic Safety Oversight (AOV) 131 (2%)

The Air Traffic Safety Oversight Service is responsible for the independent safety oversight of the ATO's provision of air traffic services. AOV's safety oversight follows a system safety approach to the operations of the ATO by:

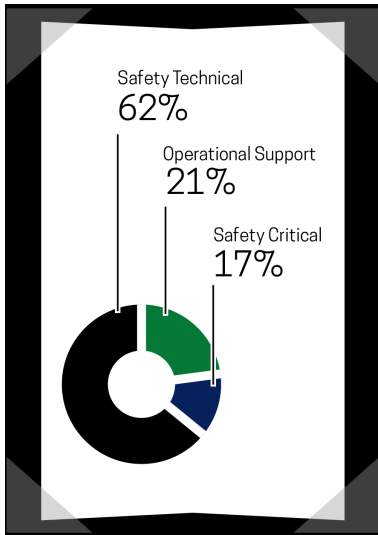
- Establishing, approving, and/or accepting safety standards
- Approving any changes to the SMS Manual
- Monitoring ATO compliance with the safety standards and the SMS
- Establishing, implementing, and maintaining a Credentialing Program to issue, amend, and remove credentials of ATO, Department of Defense, National Geospatial-Intelligence Agency, and Aeronautical Information Services personnel
- Approving controls associated with initial or current high-risk hazards, changes that pertain to separation minima, and the NAS equipment availability program
- Reviewing proposed responses to safety recommendations from the NTSB, OIG, or GAO involving the ATO



Accident Investigation and Prevention (AVP) 70 (1%)

The Office of Accident Investigation and Prevention's overall mission is to make air travel safer through accident and incident investigation, data collection, risk analysis, and information sharing by:

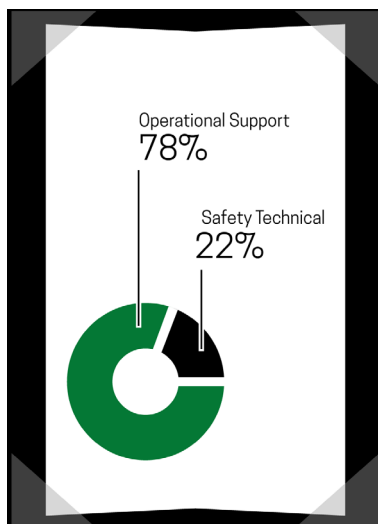
- Investigating major or significant accidents and incidents to identify safety deficiencies and unsafe conditions and trends and to recommend policy
- Addressing NTSB and internal FAA safety recommendations
- Directing ASIAs initiatives, conducting data analyses, and creating an environment to share safety information with government and industry to enhance safety
- Overseeing the AVS R&D Portfolio
- Managing the US State Safety Program (SSP), FAA Safety Management System (SMS), and AVS Safety Management System (AVSSMS).
- Coordinating the collaborative efforts of the government and industry safety teams—CAST, GAJSC



Quality, Integration & Executive Services (AQS) 60 (1%)

The Office of Quality, Integration, & Executive Services provides executive oversight and consolidated management support services for all of AVS. AQS manages all phases of administrative activities for the immediate Office of the Associate Administrator by:

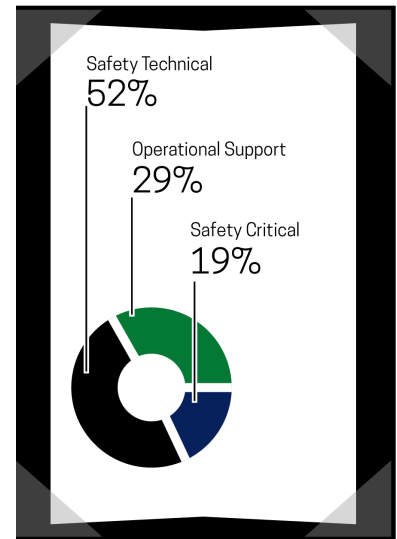
- Approving, overseeing, and facilitating integration initiatives among the AVS Services and Offices
- Overseeing the AVS Quality Management System (QMS)
- Providing budget and labor distribution reporting management
- Providing planning and administrative management



Unmanned Aircraft Systems Integration (AUS) 62 (1%)

The Unmanned Aircraft Systems Integration Office is responsible for facilitating the safe, efficient, and timely integration of UAS into the NAS by:

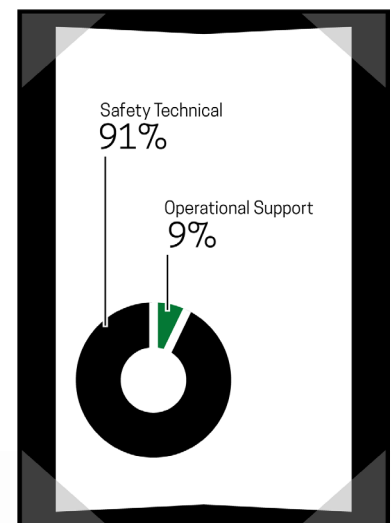
- Managing and coordinating international UAS activities for AVS and ensuring alignment of these activities with United States and FAA strategy
- Developing strategic planning goals and providing direct support for UAS R&D
- Providing project management and data support for all UAS integration-related programs and activities
- Supporting standards and policy developments related to UAS integration and providing engineering resources to support UAS projects
- Ensuring consistency of messaging and public outreach tools for all UAS-related communications materials
- Coordinating operational aspects of safe and timely integration of UAS into the NAS
- Working with industry stakeholders to ensure FAA strategic goals align with industry objectives and resources
- Facilitating cross-governmental coordination of efforts on UAS integration across FAA LOBs and Service Offices



Rulemaking (ARM) 33 (1%)

The Office of Rulemaking manages the FAA's rulemaking program, processes, and timelines by:

- Developing proposed and final rules and managing responses to petitions for rulemaking
- Managing responses to petitions for exemption from regulatory requirements
- Overseeing Rulemaking Advisory Committees that provide advice and recommendations on aviation and aerospace-related issues
- Leading, guiding, supporting, and coordinating FAA cross-organizational strategies for aviation regulations
- Coordinating with international partners



AVIATION SAFETY INSPECTORS AND AVIATION SAFETY ENGINEERS

AFS and AIR are the two largest entities within AVS, representing 90 percent of positions. The two largest occupational series, ASIs and ASEs, make up 76 percent of the personnel within AFS and AIR. These positions comprise over two-thirds of all positions within AVS.

Aviation Safety Inspectors (ASI)

ASIs are responsible for the certification and surveillance of air carriers, aircraft manufacturers, and air operators in accordance with 14 CFR. ASIs reside within AFS and AIR, where their specific responsibilities are as follows:

Flight Standards ASI responsibilities:

- Working within the aviation community to promote safety and enforce FAA regulations
- Providing oversight of aircraft operators and maintainers, pilots, designees, flight attendants, dispatchers, flight and maintenance schools, and maintenance facilities
- Developing FAA rules; policies; and guidance for operations, maintenance, and avionics-related issues (ASI headquarters-level responsibility)

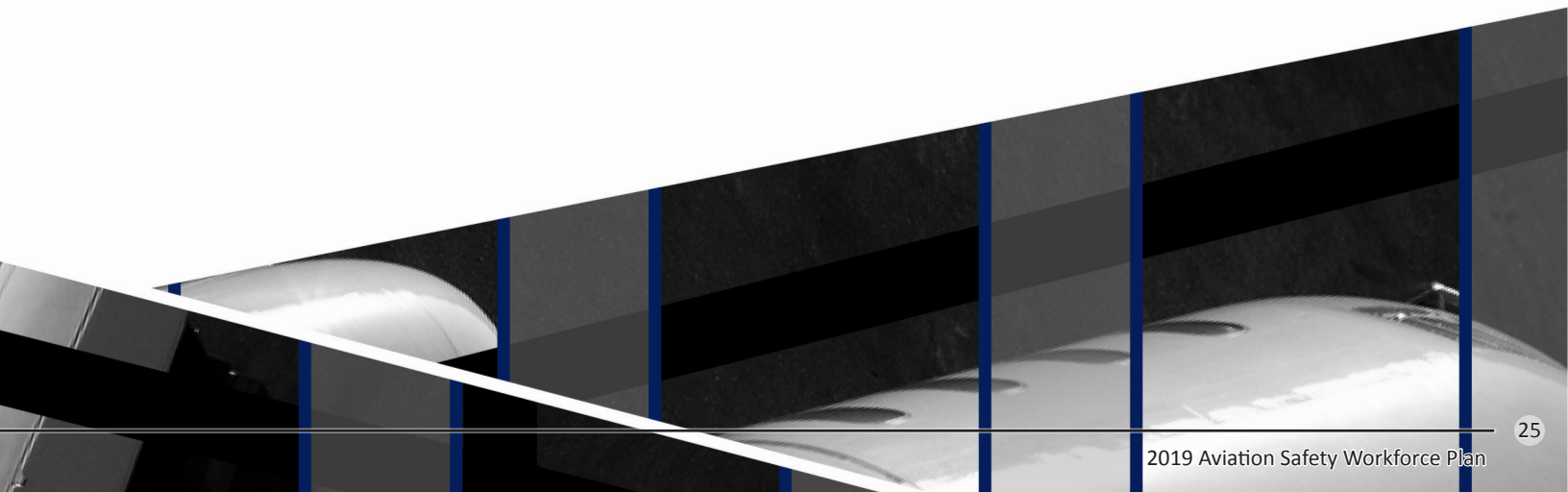
Aircraft Certification ASI responsibilities:

- Administering and enforcing safety regulations and standards governing the production; airworthiness; and continued operational safety of aircraft, aircraft engines, propellers, and other civil aeronautical products
- Providing oversight of approval holders, designees, and delegated organizations
- Ensuring continued operational safety of aircraft

Aviation Safety Engineers (ASE)

ASEs apply advanced engineering knowledge and experience in specific engineering disciplines such as airframes, systems and equipment (electronics/avionics and electrical or mechanical), propulsion, and flight tests. A majority of ASEs reside in AIR and their responsibilities are as follows:

- Administering safety standards governing the design of aeronautical products
- Evaluating designs for compliance with safety regulations and standards
- Providing oversight of approval holders, designees, and delegated organizations
- Ensuring continued operational safety of aircraft, engines, and propellers





FORECASTING AVS WORKFORCE NEEDS

Because the majority of positions within AVS are ASIs and ASEs, forecasting and modeling efforts have mostly concentrated on assessing the requirements for these positions. The AVS Staffing Tool and Reporting System (ASTARS) assists the FAA in identifying staffing requirements for ASIs, ASEs, and Aerospace Medicine airman medical certification and Air Traffic Control Specialist (ATCS) medical clearance.

AVS STAFFING TOOL AND REPORTING SYSTEM (ASTARS)

Multiple distinct staffing models forecast workforce needs under ASTARS:

- Flight Standards District Offices (FSDO) and Certificate Management Offices (CMO)
- Aircraft Evaluation Groups (AEG)
- International Field Offices (IFO)
- AIR Standards Management Team (SMT)
- Manufacturing Inspection Offices (MIO) and Manufacturing Inspection District Offices (MIDO)
- Aircraft Certification Offices (ACO)
- Office of Aerospace Medicine airmen medical certification and ATCS medical clearance

Historical Work Activities and Work Hours

The models all share the same general structure. Activities and work hours are classified and quantified by work type. The average time per activity, referred to as the nominal time, is calculated annually by using hours recorded in the Labor Distribution and Reporting (LDR) system and other appropriate oversight activity tracking systems.

Forecasting

The number of activities forecasted for the next ten years is based upon their relationship to demand drivers. Annual model improvement activities include analyzing and incorporating regression analysis to validate that a relationship exists between demand drivers and activities. Where possible and applicable, FAA-produced forecasts are used to predict workload change associated with industry growth. These forecasts are combined with field-level knowledge of expected workload changes.

The required workforce is then calculated by multiplying the nominal time per activity by the number of forecasted activities for each year for ten years. The model determines the staffing levels that will be required if the same level of effort needed to support current activities is forecasted based upon the growth or contraction of the current industry. The forecast is adjusted to account for new industry efforts in UAS and the implementation of new automation applications.



Calculation Review

All ASTARS models follow the same general development process that includes both historical data calculation and SME review. The nominal times and distributions are examined by a team of headquarters and field personnel for accuracy, trends, and outliers. The ASTARS review team is a multidisciplinary group of model developers, such as operations research analysts, economists, industrial engineers, and mathematicians. The team also includes field ASIs, ASEs, physicians, managers, and policy makers charged with developing AVS work activities. The focus of the review is to research and identify workload information that is supported with data and field experience.

The FAA Reauthorization Act of 2018 (P.L. 115-254), Section 303, has directed the FAA to update the safety critical staffing model to determine the number of ASIs that will be needed to fulfill its safety oversight mission. The Administration, as directed by Congress through the enacted legislation, is working to update ASTARS.

Data Quality Improvements

AVS has applied significant effort in the last six years on improving the data quality of workload and work-hour tracking systems. The improved data quality has allowed the ASTARS program to:

- Identify and review actual working time for various ASIs, ASEs, and AAM certification/clearance activities
- Categorize and priority-rank work activities
- Identify and quantify the potential change in activities associated with staffing increases or shortfalls
- Examine the relationship between activity categories and industry growth
- Research training times for employees at different experience levels
- Compare workload recorded in various oversight applications (i.e., the Air Transportation Oversight System (ATOS), the Program Tracking and Reporting Subsystem (PTRS), and the SAS)
- Examine the year-over-year change in time spent per activity and estimate future workload
- Examine workload differences between offices and identify potential causes (e.g., work type, company profile, and travel times)
- Quantify and project all work hours, including those spent on training, administrative activities, leave, and travel
- Examine the workload impact associated with designee oversight

As a result, the models are a more reliable source for data-informed decision making.

Figure 6 | AVS Staffing Tool And Reporting System (ASTARS) Timeline

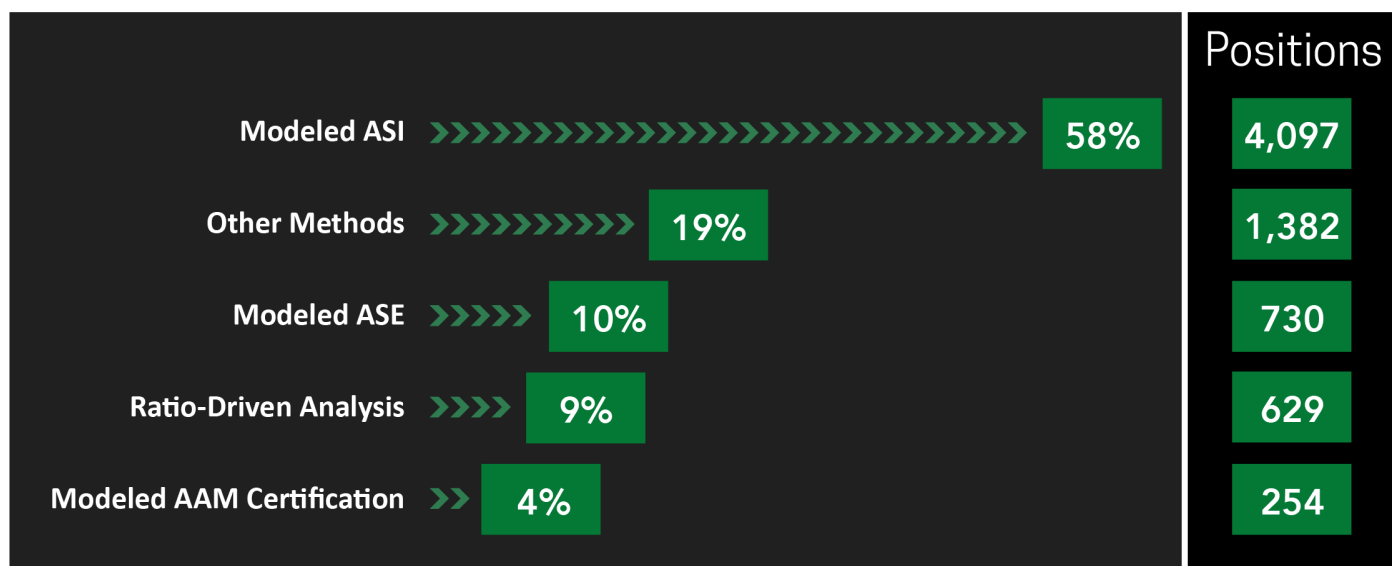
Figure 6 shows some of the major milestones of the AVS Staffing Tool and Reporting System (ASTARS).

NOV 2003	Public law 108-76 commissioned a study by the National Academy of Sciences to address ASI staffing practices and allocation decisions.
JUN 2004	FAA contracted with the National Academy of Sciences.
SEP 2006	The National Academy of Sciences published a report on inspector staffing stating the then-current staffing model for AFS did not provide sufficient information on the number of staff required or where staff should be located.
OCT 2009	AVS concurred with the National Academy of Sciences recommendation by creating the Flight Standards ASI staffing model known as the AVS Staffing Tool and Reporting System (ASTARS).
OCT 2012	AIR ASI model implemented into ASTARS.
JUN 2013	OIG released a report entitled “FAA Lacks a Reliable Model for Determining the Number of Flight Standards Safety Inspectors it Needs” with results stating the current model was not meeting expectations or requirements.
JUN 2013	AVS met with the National Academy of Sciences in the first of two expert meetings to discuss the steps the FAA had taken to implement the recommendations in the 2007 National Resource Council (NRC) report on staffing standards for ASIs and to discuss possible additional implementation steps related to staffing for ASIs.
SEP 2013	The “ASTARS Gap Analysis” report was released with results stating that the current AFS model did not incorporate all National Academy of Sciences recommendations as required.
MAR 2014	AFS model improvements begun by the multidisciplinary project team.
OCT 2014	AIR ASE model implemented into ASTARS.
SEP 2015	AFS Aircraft Evaluation Groups (AEGs) and International Field Offices (IFOs) implemented into ASTARS.
OCT 2015	AIR standards and policy (ASE/ASI) model implemented into ASTARS.
OCT 2016	All gaps identified in the “ASTARS Gap Analysis” report of 2013 have been closed with the exception of performance metrics, which will require continuous improvement.
OCT 2017	Aerospace Medicine (AAM) model for Airman and Air Traffic Certification was implemented into ASTARS.



Figure 7 | Methods For Forecasting Positions Within AVS

Figure 7 identifies methods used to forecast staffing within AVS. Information shown represents actual positions at the end of FY 2018.



Ratio Methodology Used for Safety Technical Specialist and Operational Support Staff

For both AIR and AFS, the Safety Technical Specialist Staff and Operational Support Staff are forecasted using historic staffing ratios that compare managers and administrative support personnel to Safety Critical Operational Staff requirements. Safety Technical Specialist and Operational Support positions are projected to grow based on historical ratios to the ASI and ASE positions.

Figure 7 shows which positions are determined by ASTARS, which are ratio-driven based upon ASTARS outputs, and which are forecasted outside of the ASTARS process. Forecasts of ASI, ASE, and AAM Certification positions (5,081) are generated by the ASTARS staffing models and comprise 72 percent of all AVS staffing. An additional 629 positions are Safety Critical Operational Staff, derived as a ratio of the ASTARS forecasts. The remaining 1,382 positions are determined independently of the ASTARS model, an improvement from the first AVS Workforce Plan incorporating ASTARS (FY 2010). The FAA continues to work to incorporate other workforces into data-driven models.

Managerial Input

The ASTARS model is not the sole determinant for the staffing-level decisions each fiscal year. The ASTARS model is a tool used to provide managers with macro-level resource guidance. For instance, the ASTARS model forecasts out-year (beyond FY 2021) staffing levels for AFS inspectors, AIR inspectors, AIR engineers, and AAM medical certification and ATC medical clearances. The macro-level resource guidance is further refined with expertise and judgment from Regional Flight Surgeons, field managers, division managers, executive management, and SMEs to finalize staffing decisions. This is consistent with the National Academy of Sciences 2006 report, which recommended the incorporation of subject matter expertise with model results.



LOOKING FORWARD

This section provides anticipated workforce needs, estimated levels of attrition, and the planned hiring for AVS from FY 2019 to FY 2028.

FY 2018 is shown in each figure to illustrate end-of-fiscal-year actual levels. Detailed views into anticipated staffing requirements for safety critical and operational support personnel, as well as ASIs and ASEs, are also presented in the following pages.

Figure 8, *Total AVS Forecast with Planned Hires and Estimated Losses*, projects estimated losses due to natural attrition, retirements, net transfers, and other losses. In FY 2018, actual losses were 426, including 256 positions due to retirement. The projected average annual attrition is 455 positions for FY 2019 through FY 2028.

Figure 8 also illustrates planned hires for the AVS workforce over the next ten years and compares FY 2018 actual data with FY 2019 and out-year projections. In FY 2018, actual hires were 293. The planned hiring target for FY 2019 is 605, and the average annual hiring is 547 positions for FY 2019 through FY 2028. This hiring target reflects the number of positions required to fulfill the needs discussed in the Forecasting AVS Needs section to meet the hiring target. AVS recognizes that there will be challenges that must be addressed and is in the process of reexamining outreach to talent pools, possible recruitment incentives, and process improvements.

Figure 8 | Total AVS Forecast With Planned Hires And Estimated Losses

FY 2018 actual staffing level, actual hires, and actual losses, as well as planned staffing levels, planned hires, and estimated losses for FY 2019 through FY 2028, for all of AVS.

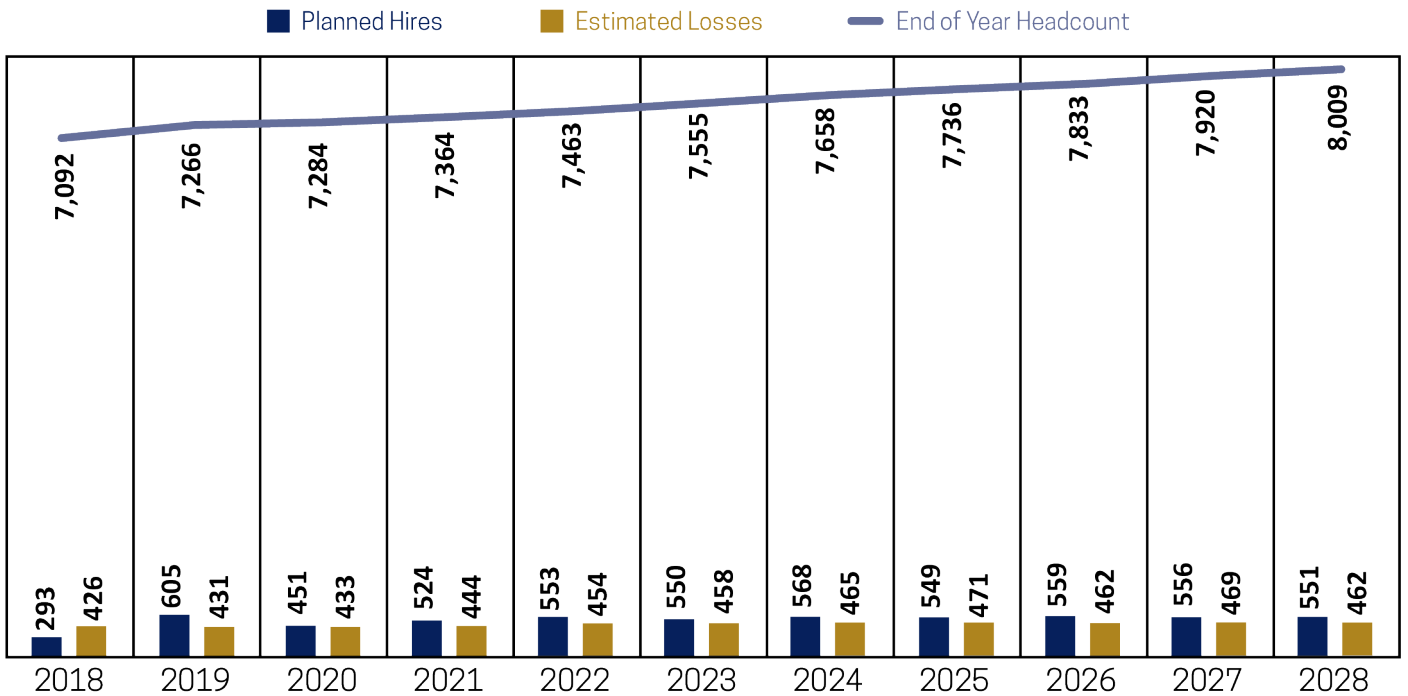


Figure 9 | ASI Forecast With Planned Hires And Estimated Losses

FY 2018 actual staffing level, actual hires, and actual losses, as well as planned staffing levels, planned hires, and estimated losses for FY 2019 through FY 2028, for all ASIs in AVS.

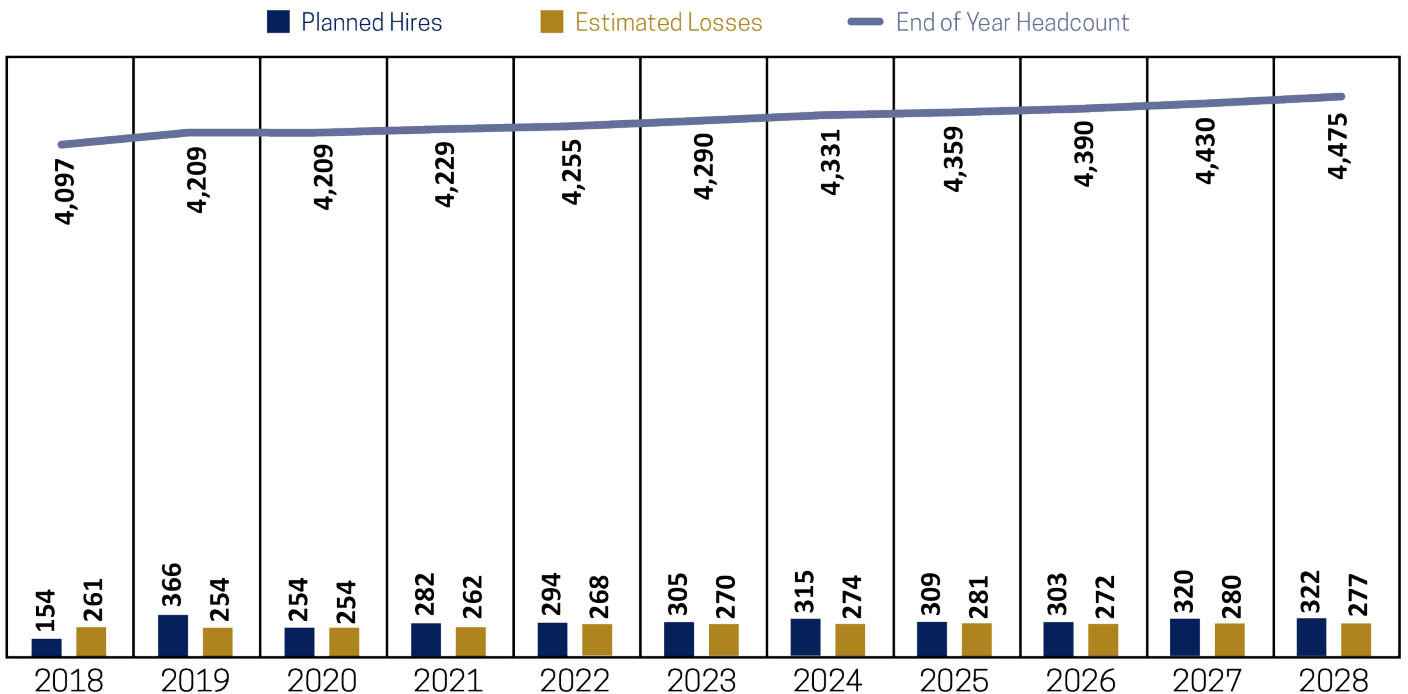


Figure 10 | ASE Forecast with Planned Hires and Estimated Losses

FY 2018 actual staffing level, actual hires, and actual losses, as well as planned staffing levels, planned hires, and estimated losses for FY 2019 through FY 2028, for all ASEs in AVS.

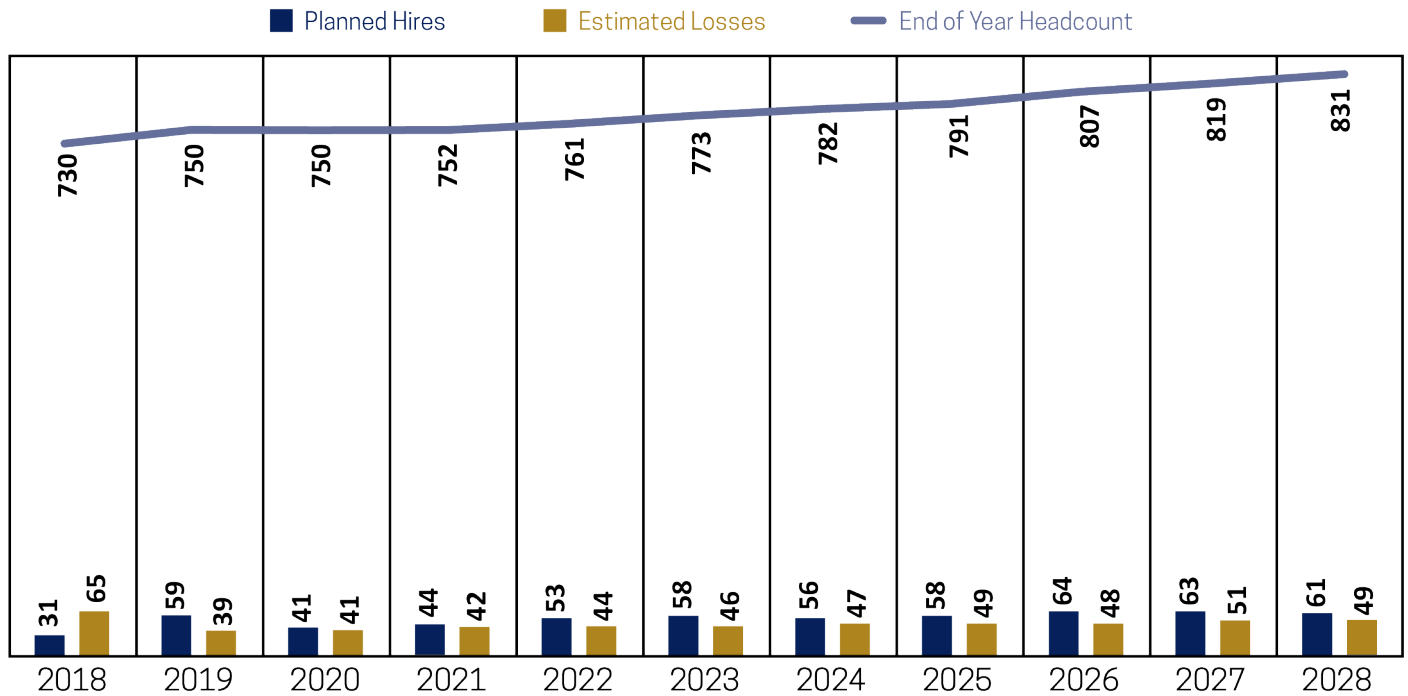
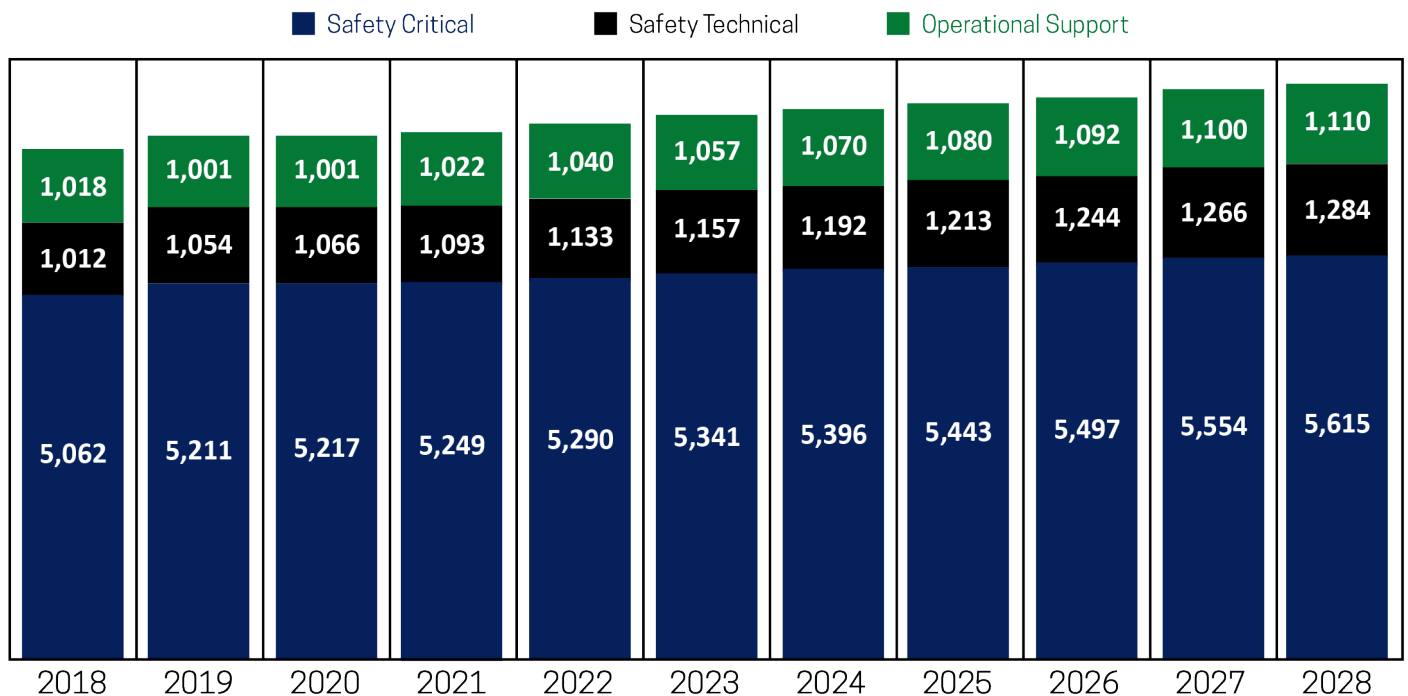


Figure 11 | Projected Staff By Staffing Category

Anticipated needs specifically for Safety Critical Staff, Safety Technical Staff, and Operational Support Staff.

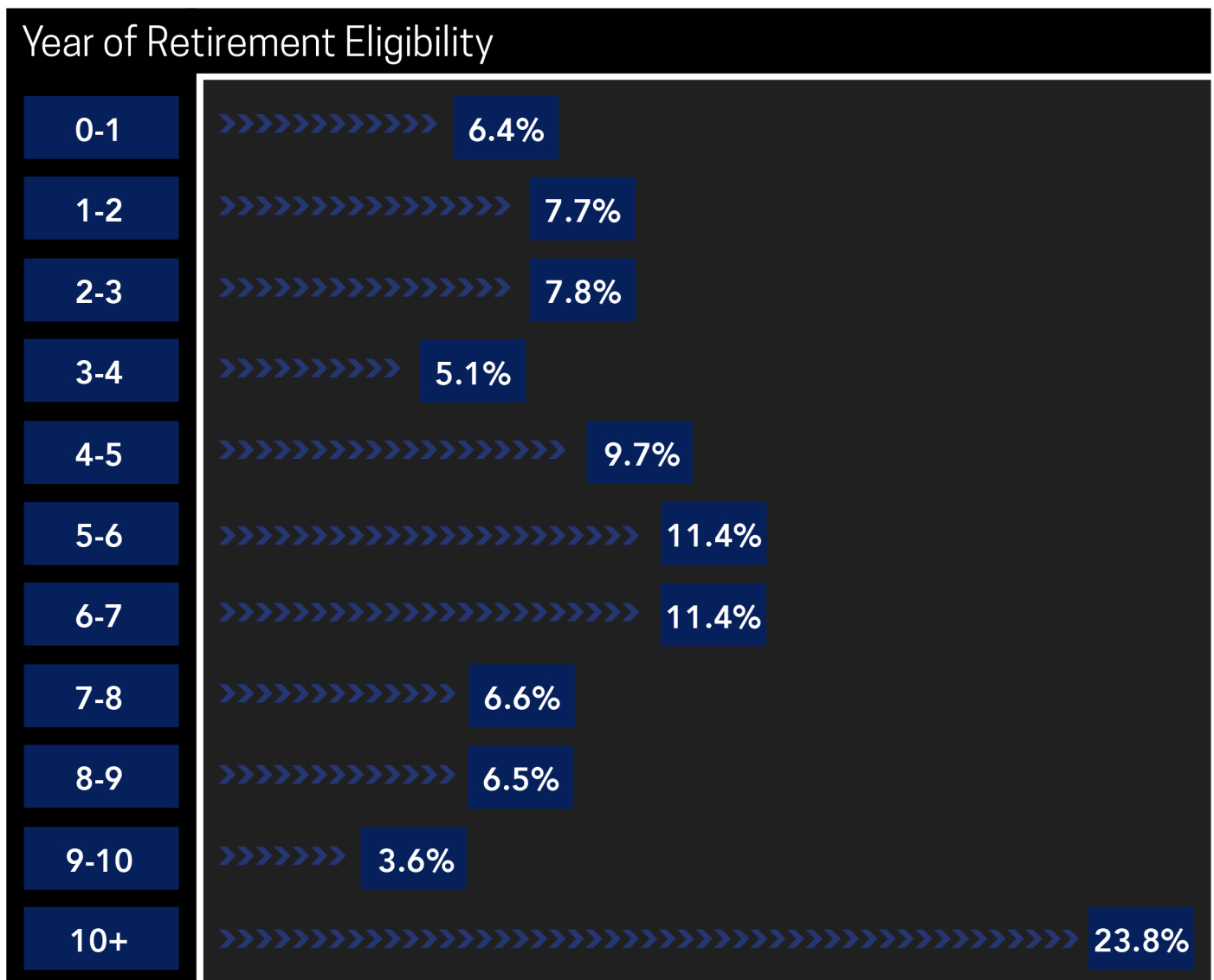


SUCCESSION PLANNING

AVS tends to hire a very experienced safety workforce for many of its positions. The average age of AVS employees when hired is 46 and the current average age of AVS employees is 54. Over the last two years, the average age at retirement for AVS personnel was 66. Past behavior reflects that a low percentage of employees actually retire immediately upon becoming eligible, and there is no mandatory retirement age for AVS employees. Figure 12 shows the historical rates of retirement with respect to year of eligibility.

Figure 12 | Percent of AVS Employees Retiring By Year of Eligibility

Forecasted percentage of AVS employees expected to retire during each year of retirement eligibility.



In FY 2019, AVS will leverage knowledge gained through federal best practices for Succession Planning in order to assess talent readiness, career desire, development gaps, and mitigating the potential loss of talent and experience. AVS continues to focus on building and maintaining a pipeline of skilled employees trained and prepared to take on roles of increasing responsibility using recruitment, retention, and development initiatives as detailed in the following sections.

Recruitment Plan

To operate successfully in a more collaborative and technologically advanced environment, AVS must continue to build a workforce adept at risk-based, data-driven decision making, as well as systematic, critical thinking. AVS must compete with private industry and other government agencies to recruit the best candidates from a specialized talent pool.

The primary recruitment and hiring vehicle AVS uses is FAA Jobs, an automated system used by applicants, managers, and HR professionals to facilitate the overall application and selection process for positions. FAA Jobs is integrated into the Office of Personnel Management's (OPM) automated hiring system, USAJOBS. This integration has allowed AVS to reach a wider pool of candidates for all of its positions.

AVS continues to use the FAA's Managerial and Employee Leadership Competency Profiles to correlate and define interpersonal and business competencies when recruiting for positions. This core competency model is used to describe a baseline-mastery level of core business and interpersonal competencies, as well as specific technical competencies required across the organization.

This model allows the competencies of individual employees to be compared against the requirements of individual positions across AVS. As a result, competencies enable individuals to:

- Better understand how their individual and group job functions support the AVS mission
- Identify how their individual competency profiles compare to the competencies required across AVS

Use of assessment tools allows AVS to fill safety critical positions with individuals who possess the skills needed to support the implementation of SMS and NextGen. Specifically, the competency model provides a systematic approach of looking at the entire lifecycle of any existing position to determine what is required for the incumbent to successfully perform the assigned duties.

AVS also continues to use core interpersonal and business competencies as a part of the Knowledge, Skills, and Abilities (KSA) assessment when creating vacancy announcements. AVS has adopted an Agency-wide hiring practice of conducting a thorough job analysis on all of its positions to ensure an accurate and timely assessment of the duties to be performed and competencies required.



Operational Support Hiring

AVS is composed mostly of technical employees, such as inspectors, engineers, pilots, physicians, and accident investigators. Operational support personnel in field facilities, regional offices, and headquarters provide business and administrative support to technical employees.

Although AVS places significant emphasis on hiring initiatives for safety critical positions, AVS is equally committed to attracting and retaining its operational support workforce. In contrast to the limited number of qualified candidates available to fill safety critical positions, AVS is not experiencing significant challenges in hiring and staffing operational support positions but rather continues to benefit from a growing talent pool of qualified candidates.

Entry-Level Hiring

To strengthen the AVS pipeline of candidates who will eventually replace retiring leaders, AVS continues to focus on the goal of recruiting new hires in safety critical occupations at lower pay bands/grades. Over the last three fiscal years, AVS has participated in over 75 recruitment and outreach events to help reach and provide career opportunity information to talent at the entry level, including career fairs at colleges and universities, collegiate information sessions, and professional conferences. AVS plans to continue such outreach efforts in FY 2019.

This fiscal year, AVS will continue to aggressively recruit and hire technically skilled employees at the entry level who can gain the knowledge and experience required to carry out the safety mission. In addition, AVS has made changes to the way it recruits for the lower level positions, such as Aviation Safety Technicians (ASTs). They include greater use of plain language in announcements and increasing the recruitment and outreach footprint for certain locations.

DIVERSITY AND INCLUSION

AVS has continued its collaboration with the Office of Human Resource Management (AHR) and the Office of Civil Rights (ACR) to conduct ongoing analyses of hiring practices. This is to ensure AVS is able to assess best practices and identify barriers to developing and improving hiring procedures. The analysis also allows AVS to conduct briefings and provide training materials for hiring managers that will keep them informed and equipped with the resources and tools necessary to hire candidates with the right skill sets for the job.

In FY 2015, a Barrier Analysis was completed for ASI positions to identify potential barriers that existed in the hiring process that could limit employment opportunities for individuals of a particular race, ethnic background, gender, or those with disabilities.

The analysis found potential barriers to attracting diverse candidates to AVS and provided valuable information on how the hiring process can be standardized and improved to ensure fairness and equity. In FY 2018, AVS continued to collaborate with AHR to implement actions from the Barrier Analysis Corrective Action Plan (CAP), which identified strategies to further improve and standardize the hiring process. AVS worked with AHR and ACR to implement and complete the identified strategies in December 2017. Those implemented corrective actions will continue to be monitored and evaluated on an ongoing basis in FY 2019 to ensure they are working as intended.

AVS continues to collaborate with AHR, ACR, the Office of Chief Counsel (AGC), and members of FAA employee associations to develop and implement diversity and inclusion (D&I) strategies designed to ensure the organization is attracting and hiring talented applicants from diverse backgrounds, which supports the FAA’s strategic initiative to create a workforce with the leadership, technical, and functional skills necessary to ensure the U.S. has the world’s safest and most productive aviation sector.

FY 2018 marked the five-year anniversary of the *AVS Diversity and Inclusion Work Plan*, which established long-term goals, strategies, and actions to assist managers in successfully recruiting, hiring, promoting, educating, and retaining a more diverse workforce. It also identified initiatives that help build a culture that encourages respect, collaboration, flexibility, and fairness. Since FY 2014, AVS made improvements to integrate key D&I initiatives into work processes and business plans and will continue to advance key D&I initiatives and goals in FY 2019.

Figure 13 | AVS Diversity And Inclusion

The AVS Diversity and Inclusion Work Plan establishes long-term goals, strategies, and actions to assist managers to successfully recruit, hire, promote, educate, and retain a more diverse workforce.

Workforce Diversity	Workforce Inclusion	Sustainability
AVS shall recruit from a diverse, qualified group of potential applicants to secure a high-performing workforce drawn from all segments of American society.	AVS shall cultivate a culture that encourages collaboration, flexibility, and fairness to enable individuals to contribute to their full potential and further retention.	AVS shall develop structures and strategies to equip leaders with the ability to manage diversity, be accountable, measure results, refine approaches on the basis of such data, and engender a culture of inclusion.

Since its implementation in FY 2014, AVS completed over 55 activities contained in the plan. For example:

- Required Equal Opportunity Employment (EEO)/D&I training for new AVS managers and employees, which is delivered through the AVS Overview and Crucial Accountability Courses
- Established a recruitment and outreach program targeting diverse audiences
- Established a policy mandating that AVS managers engage in mediation when requested by employees
- Instituted a process to track engagement in Alternative Dispute Resolution
- Instituted a process to track the timeliness of reasonable accommodation requests
- Promoted Persons with Disabilities (PWD) hiring and internship opportunities
- Participated in the Office of Civil Rights (ACR)'s agency-wide EEO Action Committee (EAC) Workgroups for women, Hispanics, and Person's with Targeted Disabilities (PWTD)
- Engaged with the National Employee Forum/Employee Associations Annual Training Conferences
- Instituted a virtual annual AVS EEO Training Week

As an example of increasing diversity, AVS supported the Agency's Persons with Targeted Disabilities (PWTD) hiring initiative. Between FY 2013 and FY 2018, AVS hired 58 PWTD, which represented an average of a 3 percent PWTD new hire rate for AVS, meeting the Agency-wide PWTD hiring goal of three percent. In FY 2019, AVS will continue to promote and support the hiring of people with disabilities and targeted disabilities.

In addition, for the first time in FY 2018, in an effort to promote diversity and inclusion and the role it can play in building a sufficient talent pipeline to address the evident shortage of qualified pilots and aviation mechanics, AVS hosted an inaugural STEM Career Symposium. During the symposium, Washington, D.C. area middle school and high school students engaged in hands-on aviation safety demonstrations and were encouraged to consider aviation careers. Our path forward in FY 2019 will include an increased focus on early outreach and education efforts with the next generation of aviation professionals.

Also in FY 2018, AVS supported ACR by hosting nine training sessions covering multiple EEO topics. The FY 2018 goal was to train 70 percent of managers and 20 percent of employees. AVS exceeded this goal, training 84 percent of managers and 26 percent of employees.

RETENTION PLAN

Employee Engagement

Once AVS hires an employee, the focus shifts to retention. To increase employee satisfaction and engagement levels, AVS continues to strive to become a workplace of choice by ensuring:

- Employees have a professional, open, transparent, and safe work culture that encourages innovation, empowerment, and growth
- Training stays current with Agency strategic challenges and strengthens leadership and technical competencies
- Employees have the opportunity to participate in development programs to strengthen leadership skills

Senior leaders take an active role in communicating with and engaging employees by:

- Using Town Hall meetings to update AVS employees on current activities and accomplishments
- Conducting site visits to offices throughout the country
- Encouraging participation in the U.S. Department of Transportation's (DOT) IdeaHub, a DOT-wide online collaborative tool used to create ideas and help shape solutions for improving the FAA's workplace
- Distributing the AVS Flyer, an internal communications resource emailed to all AVS employees with weekly content updates
- Holding various meetings and conferences to provide managers and other employees with the resources and skills needed to better support day-to-day operations
- Participating in panel discussions with new employees at the Aviation Safety Overview Course
- Using the Federal Air Surgeon Bulletin to communicate with AAM employees
- AAM also provides information to employees via conferences and summits
- Monthly brown bag meetings with small groups of employees and senior leadership

Compensation Incentives

To better compete with private industry recruitment practices, AVS offers a limited number of incentives, such as leave enhancements, new hire pay flexibilities, telework, and degree completion programs.

In FY 2018, AVS introduced recruitment incentives for Operations ASIs, including on-the-spot hiring authority and higher entry-level employee salaries to increase the pool of eligible applicants. AVS plans to continue and expand on these incentives in FY 2019.

WORKFORCE DEVELOPMENT PLAN

Training Goals

AVS develops its workforce by providing employees with necessary training to ensure they have the knowledge and skills needed to respond to aviation safety challenges and assume roles of increasing responsibility. AVS training leverages a combination of innovative training, including synchronous Web-Based Training (WBT) (student and instructor present at the same time), asynchronous WBT (self-paced), and traditional classroom-based instruction. Although AFS, AIR, AAM, and AOV maintain their own training organizations, their efforts align with and support AVS’s overarching workforce development program, which focuses on the development, delivery, and evaluation of specialized technical training. AVS workforce development goals include:

- Identifying training needs and requirements for inspectors, engineers, and other safety critical occupations
- Providing training and professional development opportunities to fill any skill or competency gap and to enhance current performance
- Continuing to use technology for training delivery as appropriate (e.g., Blackboard, training webinars, self-paced WBT, and mobile learning)
- Implementing FAA Compliance Program in curricula where applicable, including the AVS 101 Webinar and the AVS Overview Course
- Reinforcing AVS curricula with risk-based decision making concepts
- Providing an AVS 101 Webinar to all new hires
- Continuing to deliver diversity and inclusion concepts through the AVS Overview Course for new hires and the Leading & Leveraging Diversity Course for managers

Figure 14 | Agency Training Types

Figure 14 explains the distinction between several types of training AVS provides its workforce.

AGENCY TRAINING		
Initial Technical Training	Recurrent Technical Training	Managerial/ Leadership Training
AVS provides initial technical training within the first 12 months of employment using the blended training model. Courses are provided online and in the classroom tailored to staff specialization.	AVS calls for annual role-based, competency-focused training requirements. A new tool has been implemented to monitor and revise training needs throughout the year.	AVS continues to identify gaps between Agency-level programs and AVS requirements. Active participation has remained with the redesign of Agency-level curriculum as well as management training.

Initial Technical Training

Training provided to new Safety Critical Operational Staff varies across the different Services and Offices and ranges from one to fifteen weeks, depending on a new hire's specialty. For most employees, initial technical training is provided within the first 12 months of employment. AVS uses a blended training delivery model, with some components delivered through online courses and others in the classroom. Flight Standards has four main areas of technical specialization:

- General Aviation Operations
- General Aviation Airworthiness
- Air Carrier Operations
- Air Carrier Airworthiness

Each of the four areas listed above require a series of initial courses called "string training." AIR requires all AIR employees to attend AIR Indoctrination training to introduce and familiarize employees with the AIR mission and values. This is followed up with other training based on the employee's anticipated role in the organization. Safety Critical Operational Staff also take required training in:

- Aerospace Engineering (Airframe, Propulsion, Systems, and Software)
- Aviation Safety Inspection-Manufacturing
- Delegation Management

Employees with other technical specialties in AVS (e.g., Drug Abatement Inspectors, Air Traffic Safety Inspectors, and Rulemaking staff) receive structured initial technical training specific to their field of expertise. Employees involved in rulemaking activities are provided detailed training on the regulatory drafting and rulemaking and exemption processes.

Additional/Recurrent Technical Training

After employees complete the initial technical courses, AVS identifies additional training needs during annual calls for training requirements. These requirements are role-based and focused on competency. Supervisors work with their employees to determine what kind of training employees need and when they need it. Supervisors also evaluate the skill sets represented in their offices to determine if employees require additional skills. Inspectors, designee advisors, and flight test pilots are required to receive initial and recurrent training tailored to their particular job responsibilities. Supervisors and their employees continuously review training requirements in order to keep pace with changes in the aviation industry.

In FY 2014, AVS implemented the Consolidated Management Resource Information System (CMRIS), a "call for training" tool for AFS and AIR that provides greater flexibility to monitor and revise training needs throughout the year.

In FY 2019, AUS is working to assess the training needs of our workforce by creating a training plan that will continue to develop and retain skilled employees who are trained and prepared to take on roles of increasing responsibility. This will be achieved through training facilitated by AUS SMEs, outside vendors, and our established lunch and learn series.

Managerial/Leadership Training

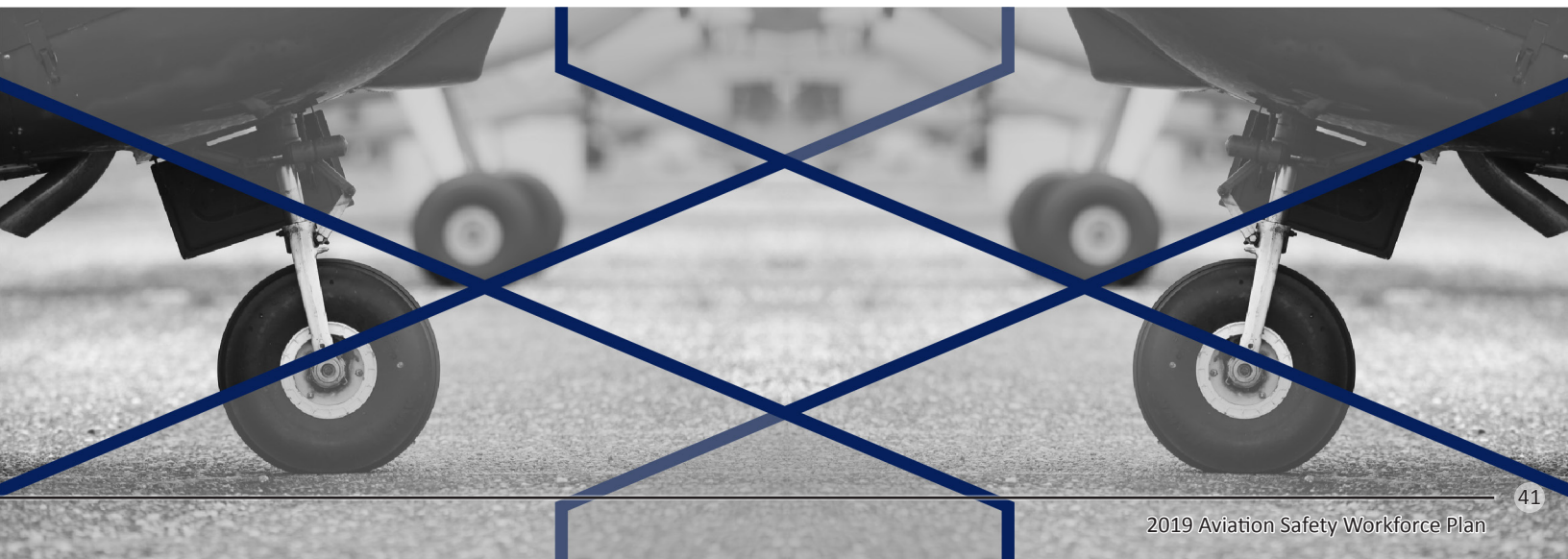
Of the 926 AVS executives and managers, 302 are currently eligible for retirement, representing 33 percent of the management population. Within the next one to five years, another 269 will become retirement eligible, representing an additional 29 percent of the management population. Like other positions within AVS, executives and managers are not required to retire immediately upon eligibility. However, it is important to build and maintain a pipeline of skilled employees who are trained and prepared to take on roles of increasing responsibility.

In FY 2016, AVS reviewed leadership development opportunities in collaboration with the FAA Office of Learning and Development, particularly the FAA Leadership and Learning Institute (FLLI), as well as other FAA lines of business. The assessment identified gaps between the Agency-level programs and AVS-specific requirements. In FY 2019, AVS will continue to assess the best way to meet these identified gaps.

AVS strongly encourages personnel to participate in leadership development opportunities offered by the Agency, such as the Program for Emerging Leaders (PEL) for staff-level personnel aspiring to be managers, the Federal Executive Institute (FEI) for all levels of management, and the Senior Leadership Development Program (SLDP) for high potential senior managers.

AQS continues to train AVS managers in effective communications via the Crucial Accountability (CA) course. The CA course has reached all eight Services and Offices. AVS continues to conduct the AVS Overview Course for all new AVS employees, which includes a panel session with senior AVS leadership.

AFS continues to use its Curriculum Oversight Team (COT) to oversee the curriculum for managers, implement content that focuses on leadership and communication skills, and streamline content across various mandatory training courses. In addition, the COT oversees the common curriculum requirements that impact multiple courses and provide corporate leadership with strategies and policies that impact the training required by managers. The approach is a blend of activities related to organizational health, coaching, mentoring, and training. AVS will continue to monitor Flight Standards Service initiatives to consider expanding their management and leadership activities across all Services and Offices.



FUNDING

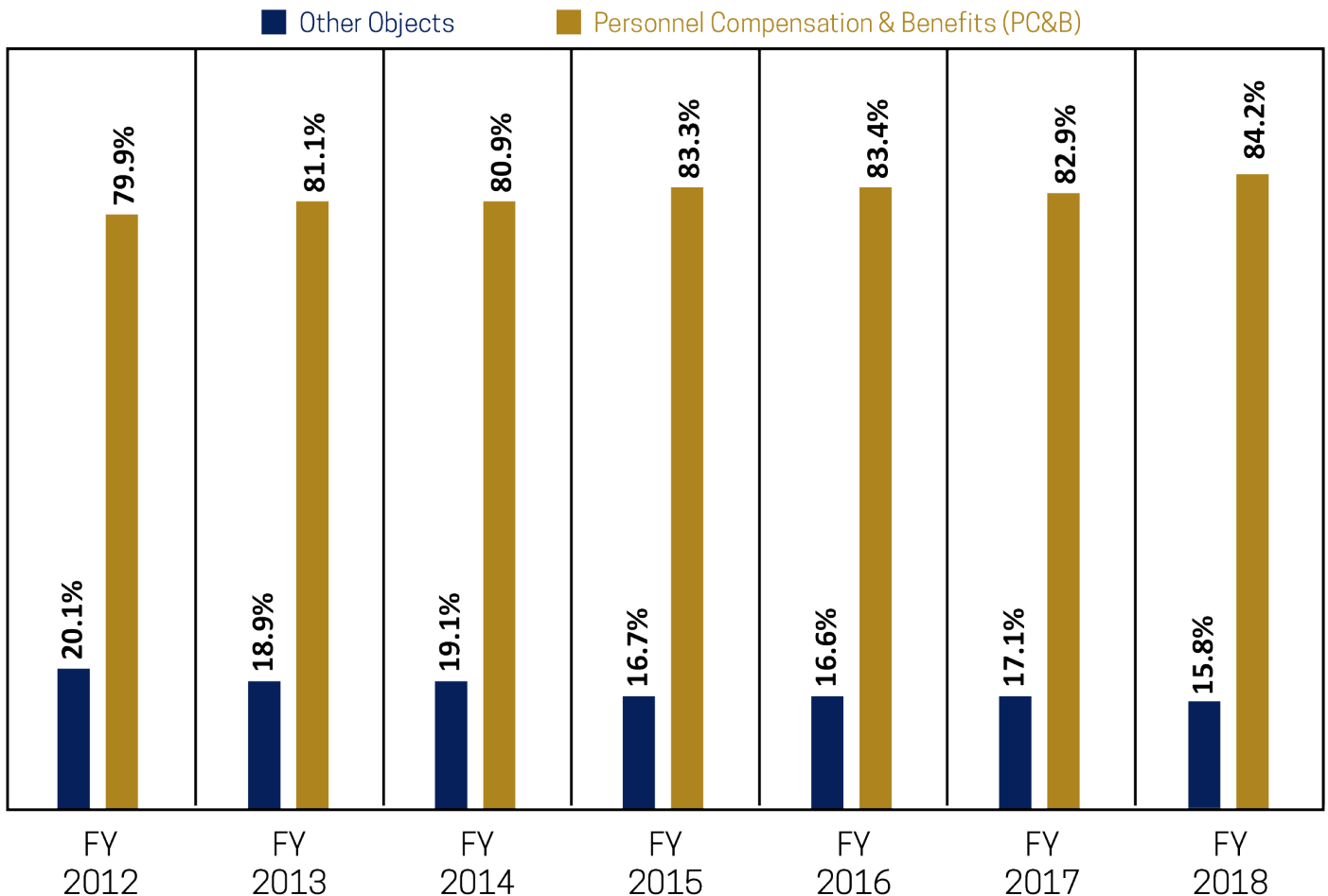
Staffing is AVS's greatest cost outlay. Because personnel compensation and benefits consumed over 83 percent of the AVS FY 2018 operational budget, controlling these costs will be critical to the long-term sustainability of operations.

Although AVS mainly relies on attrition to manage personnel costs, it continues to monitor hiring and staffing to control pay, compensation, and benefit costs.

AVS requires specialized training and equipment as well as supplies, travel, and other non-payroll funding for its employees to perform the organization's safety oversight and surveillance responsibilities effectively. AVS policy is to maintain a mobile workforce that is both trained and equipped to carry out the organization's safety mission.

Figure 15 | Personnel Compensation and Benefits (PC&B) And Non-PC&B Shares

AVS actual and projected percentage funding by fiscal year and major object classification.





SUPPLEMENTAL INFORMATION: Appendices

Appendix 1 | AVS Staffing (Operations Appropriation)

		Safety Critical	Safety Technical	Operational Support			
End-of-Year Employment – Full-Time Positions (FTP)					FY 2018 Actual	FY 2019 Enacted	FY 2020 Request
FLIGHT STANDARDS	Engineers				19	19	19
	Aviation Safety Inspectors				3,854	3,935	3,935
	Safety Technical Specialist Staff				416	461	461
	Operational Support Staff				723	710	710
	Total				5,012	5,125	5,125
AIRCRAFT CERTIFICATION	Aviation Safety Inspectors				243	274	274
	Pilots, Engineers, CSTAs (ASEs)				730	750	750
	Safety Technical Specialist Staff				200	183	183
	Operational Support Staff				168	152	152
	Total				1,341	1,359	1,359
AEROSPACE MEDICINE	Physicians, Physician Assistants, Nurses				56	57	60
	Alcohol/Drug Abatement Inspectors				56	58	61
	Safety Technical Specialist Staff				232	233	245
	Operational Support Staff				39	43	43
	Total				383	391	409
AIR TRAFFIC SAFETY OVERSIGHT	Air Traffic Safety Inspectors				80	79	79
	Safety Technical Specialist Staff				46	46	46
	Operational Support Staff				5	5	5
	Total				131	130	130
RULEMAKING	Safety Technical Specialist Staff				30	36	36
	Operational Support Staff				3	4	4
	Total				33	40	40
ACCIDENT INVESTIGATION AND PREVENTION	Air Safety Investigators				12	14	14
	Safety Technical Specialist Staff				43	49	49
	Operational Support Staff				15	17	17
	Total				70	80	80
UNMANNED AIRCRAFT SYSTEMS INTEGRATION	ASIs and ASEs				12	25	25
	Safety Technical Specialist Staff				32	32	32
	Operational Support Staff				18	18	18
	Total				62	75	75
QUALITY, INTEGRATION, AND EXECUTIVE SERVICES AND AVS EXECUTIVE STAFF	Safety Technical Specialist Staff				13	14	14
	Operational Support Staff				47	52	52
	Total				60	66	66
GRAND TOTAL	Safety Critical Operational Staff				5,062	5,211	5,217
	Safety Technical Specialist Staff				1,012	1,054	1,066
	Operational Support Staff				1,018	1,001	1,001
	AVS Staff				7,092	7,266	7,284

Appendix 2 | Aviation Safety Primary Stakeholders as of December 2018

Air Operator Certificates: 5,435

82	Major U.S. Air Carriers
2,209	Commuter Air Carriers/On Demand Air Taxi
83	Commercial Operators
515	Foreign Air Carriers
381	External Load (e.g., Logging, Oil Platforms)
1,843	Agricultural Operators
322	Public Use Authorities (e.g., State/City/Police)

Air Agency Certificates: 6,776

925	Pilot Training Schools
5,292	Repair Stations
198	Maintenance Training Schools
361	Pilot Training Centers

Registered Manned Aircraft: 291,184

Registered Unmanned Aircraft: 1,267,233

293,627	Commercial (on-line and paper)
973,606	Hobby

Check Airmen: 9,326

5,703	Part 121
117	Part 121/135
3,506	Part 135

Designees: 9,253

2,818	Aircraft Certification
3,762	Flight Standards
2,673	Aerospace Medicine

Foreign Authorities/Entities with Bilateral Agreements: 47

Foreign Civil Aviation Authorities: 191

Foreign Accident Investigation Authorities: 187

Flight Instructors: 108,808

Mechanics with Inspection Authority: 21,797

Approved Manufacturers: 1,579

Active Pilots: 792,003

167,691	Airline Transport
114,867	Commercial
173,233	Private
138	Recreational
6,299	Sport
173,537	Student
41,248	Foreign
114,990	UAS Remote

Non-Pilot Air Personnel: 721,738

333,239	Mechanics/Repairmen
25,175	Control Tower Operators
233,977	Flight Attendants
68,129	Ground Instructors
61,218	Other (e.g., dispatchers, flight navigators, parachute riggers, flight engineers)

ATCS Medical Clearance Exams: 14,780

14,668	Air Traffic Controller Workforce
112	Flight Service Station Workforce

ATO Credentialed Personnel: 16,906

Airmen Medical Examinations: 372,060

33,464	Special Issuances
338,596	Standard Issuances

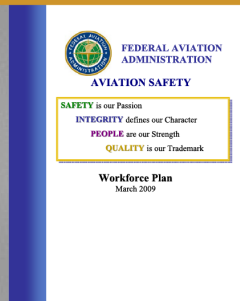
Aviation Industry Entities Covered by Anti-Drug and Alcohol Programs: 6,833

National Transportation Safety Board Recommendations and Requests: 888

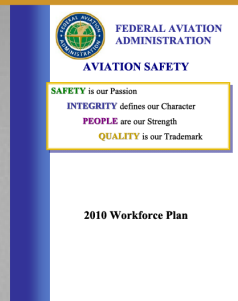
361	Open NTSB Safety Recommendations
177	Closed NTSB Safety Recommendations
350	Formal NTSB Requests for FAA Research and Information



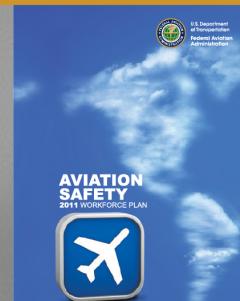
2008



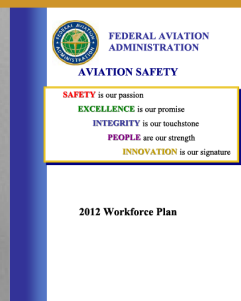
2009



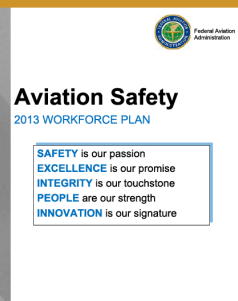
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2011



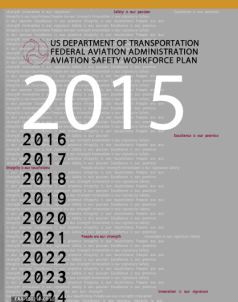
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2013



2014



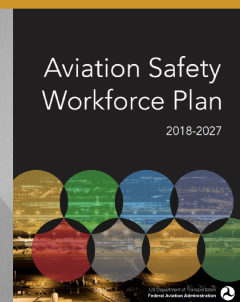
2015



2016



2017



2018

